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**INTERACTION OF PSYCHOLOGICAL,  
ECONOMIC, SOCIOLOGICAL AND  
TECHNOLOGICAL DETERMINANTS OF THE  
ENTREPRENEURIAL BEHAVIOUR OF  
AGRICULTURAL STUDENTS**

*BY*

**SEEMA.B. M.Sc.(Ag.)**

**THESIS**

**SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENT FOR THE DEGREE**

**DOCTOR OF PHILOSOPHY**

**FACULTY OF AGRICULTURE  
KERALA AGRICULTURAL UNIVERSITY**

**DEPARTMENT OF AGRICULTURAL EXTENSION  
COLLEGE OF AGRICULTURE  
VELLAYANI : THIRUVANANTHAPURAM**

**1997**

*Dedicated to*

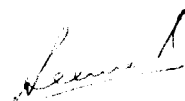
*My beloved father Late Sri. N.Balan*

## DECLARATION

I hereby declare that this thesis entitled 'Interaction of psychological, economic, sociological and technological determinants of the entrepreneurial behaviour of agricultural students' is a bonafide record of research work and this thesis has not previously formed the basis for the award to me of any Degree, Diploma, Associateship or any other similar title of any other university or society.

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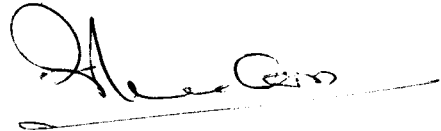
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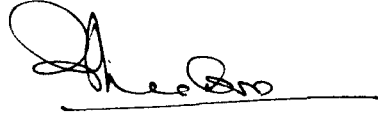
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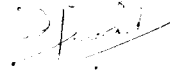
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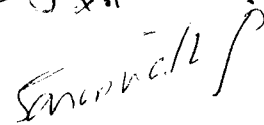


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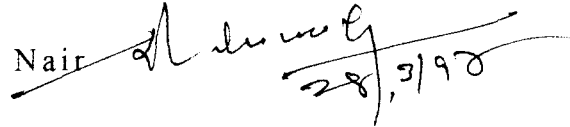


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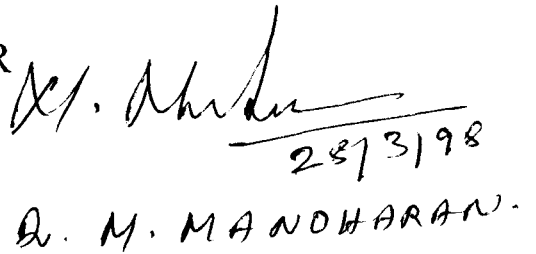


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# INTRODUCTION

## 1. INTRODUCTION

Economic backwardness is an appalling feature of developing countries. A country may possess abundant and inexhaustible natural and physical resources, necessary machinery and capital equipment but unless there are enterprising human resources to combine these resources in right proportion, nation cannot make rapid strides towards social and economic development. The development or underdevelopment is the reflection of development or underdevelopment of entrepreneurship in the country. With liberalisation and global competition being the governing societal paradigm and with the acknowledgment that wealth creation is indeed of paramount importance the concept of entrepreneurship is receiving closer attention than hitherto from business management scholars and social scientists.

Unemployment amongst the educated youth has been one of the burning problems faced by the country in the recent years. Unemployment in Kerala is surmounting and local human and physical resources are largely untapped. The Problem of unemployment in developing countries is qualitatively and quantitatively different from the one in the developed countries. In the developed countries the income of unemployed is protected to a not inadequate degree, through social welfare, yet social problems still constantly

arise. This points to the role of work in human psyche. The basic role of action in human psyche is stated in the Indian tradition when Sree Krishna says in Bhagavad Gita that, 'there is nothing for the Supreme Being to attain, still I engage in action' (3:22). This is not merely an economic phenomenon. It has a social and psychological impact, besides being a corollary of the dynamics of action it is a symbol of rejection of being unwanted in society.

The wastage of manpower causes poverty. Agriculture sector in Kerala has the greatest potential to generate gainful employment for the youth especially the agricultural graduates. It cannot be an exaggeration to state that agriculture as a venue for self employment is grossly neglected in Kerala by agricultural graduates. Efforts to ameliorate the situation and attract the agricultural graduates to go in for self employment are very essential.

India's enormous resources of manpower can only become an asset in the modern world when trained and educated. Most students going through the process of higher learning do so to become qualified to secure a government job and also to earn degree which is considered as a measure of educational achievement. These new trained personnel add to the stock of countries science and technology personnel and put a lot of pressure on employment market. In order to have full and fruitful utilisation of Indian

science and technology personnel it is necessary that they are trained to meet the needs of Indian society.

In the context of our commitment as a nation to the ideals of social justice and diffusion of economic power to the widest extent, it is necessary to develop the latent skill of entrepreneurship in a large number of people as possible.

Entrepreneurial functions have assumed a high degree of relevance in the present context and entrepreneurship is being perceived by planners and policy makers alike as a crucial parameter of economic development with high employment and income generation potential. Human resources are an important variable in overall efforts of development.

The government's conviction in the need to provide impetus to entrepreneurial initiative is evident from the plethora of schemes / plans announced from time to time to stimulate small scale sector development. It is equally well reflected in financial assistance package offered by the financial institutions / banks on attractive terms and also in assistance offered by private / government agencies, banks for providing training to potential entrepreneurs.

Past work done in occupational choice of agricultural students are briefly mentioned below.

Thakur (1967) had reported that majority of agricultural graduates were interested to take up occupation directly associated with agriculture namely farming, agricultural extension, research and teaching.

Oliver *et al* (1975) reported that 97.74 percent of agricultural graduates were willing to join the Department of Agriculture and only 2.26 percent desired to go back to their farms.

Subramanyan (1975) reported that agricultural graduates generally preferred employment in the nationalised banks and state Department of Agriculture.

Vijayaraghavan (1983) concluded that majority of agricultural graduates did not take up self employment due to the hardships in agriculture and allied activities.

Manohari (1988) found that majority of the women agricultural graduates (65.62%) were not interested in taking up self employment.

The students of Kerala Agricultural University are rarely seen taking up self employment. The reason for this cannot be pinpointed. The probability is that it is due to some characteristic traits that the graduates are not taking



up self employment. The study will be throwing light on this aspect.

### **1.1. objectives of the study**

The overriding objective of the study is to identify the factors which are conducive for the entrepreneurial behaviour of agricultural students.

More specifically the present study was designed with the following objectives.

- (1) To develop a scale to measure the entrepreneurial behaviour of agricultural students.
- (2) To assess the extent of entrepreneurial behaviour of agricultural students.
- (3) To delineate the psychological, economic, sociological and technological factors which contribute to the entrepreneurial behaviour of agricultural students.
- (4) To develop a strategy 1) to inculcate suitable traits in the undergraduate students to develop entrepreneurial behaviour in them and 2) to develop conducive condition for undertaking self employment for agricultural graduates.

## ***1.2. Scope of the study***

The students of Kerala Agricultural University are rarely seen taking up self employment. Unlike the students of other professional courses like engineering, medicine the students of agriculture secure admission in the Agricultural University with a white collar job motive. Considerable avenues of job opportunities especially in the nationalised banks some time back was also a motive force behind this. In the present time of employment stress, unless the youth are encouraged to take up self employment, there will be a wastage of trained man power. How best the agricultural students can be trained and managed to take up self employment needs to be explored so as to find a way to strengthen their behavioral traits and characters to promote entrepreneurial activities. The study will be throwing light on this aspect. The study will be identifying the manipulable variables which can be manipulated during their curriculum. By identifying these manipulable variables, the curriculum can be modified in such a way that these desirable traits / characteristics are inculcated in the students while they are undergoing their graduation. The study will bring out a strategy to develop conducive conditions for undertaking self employment by the agricultural graduates.

The scientific procedures to be developed in the study for delineating and weighing of factors contributing to entrepreneurial behaviour, measurement devices such as

scale developed to measure entrepreneurial behaviour it is hoped will be a contribution to the field of research methodology in Agricultural extension.

### ***1.3. Limitations of the study***

The respondents of the study are the agricultural students and graduates of agriculture who are not actual practitioners of any enterprise. The study was done on a hypothetical situation. Since the study was completely based on expressed opinion of the respondents, it may not be free from their personal bias and prejudices. Mailed and distributed questionnaire were used for data collection, which restricted the meaningful interaction with respondents. The undergraduate and postgraduate students who were undergoing their graduation or post graduation courses who formed a part of the sample for the study were busy with their curricular work. This again might have influenced their response.

Above all this study was a single researcher investigation as a part of the requirement for the Doctoral degree programme, the constraints of time and resource restricted the comprehensive and in-depth study of the concept of entrepreneurship.

#### ***1.4. Presentation of the study***

The report of the study is presented under five chapters. The first chapter deals with the introduction, where in the objectives, scope and limitations of the study are discussed. The second chapter covers the review of theories and related studies in the light of the present investigation. The third chapter is devoted to the methodology where in details regarding the procedures used in the measurement of variables involved in the study, selection of respondents, techniques of data gathering and statistical tools employed to analyse the data are presented.

In the fourth chapter the results are presented and are discussed. Chapter five gives a summary of the study, followed by reference and appendices.

THEORETICAL  
ORIENTATION

## 2. THEORETICAL ORIENTATION

Review of literature is necessary for any research endeavour. In this chapter an attempt is made to present the most important concepts coming under the purview of the present study and the relevant findings of the past studies. Since this study is a pioneer work in the specific area, review could be done only from related areas of study and these are presented under the following sections.

- 2.1. Entrepreneur-Entrepreneurship-Conceptual frame work.
- 2.2. Functions of entrepreneur.
- 2.3. Determinants of entrepreneurial behaviour
- 2.4. Vocational choice or aims.
- 2.5. Personal and socio-psychological factors influencing entrepreneurial behaviour.
- 2.6. Conceptual framework of the study.
- 2.7. Hypotheses of the study.

### ***2.1. Entrepreneur and entrepreneurship - a conceptual frame work***

#### **2.1.1 Entrepreneur**

The word entrepreneurship appeared first in French according to Encyclopedia Britannica. In the early

16<sup>th</sup> century it was applied to those who were engaged in military expeditions. In the 17<sup>th</sup> century it was extended to cover civil engineering activities such as construction fortification.

According to Say, (1816) “ the entrepreneur is the economic agent who unites all means of production, the labour of the one, the capital or the land of the other and who finds in the value of the wages, the interest and the rent which he pays as well as profits belonging to himself”. His conception of the entrepreneur is remarkable for it clearly distinguishes between the role of capitalists as a provider of finance and entrepreneur as the organiser and speculator of a business concern.

**The** Oxford English Dictionary (1897) defined entrepreneurs simply as the ‘director or manager of a public musical institution, one who ‘gets up’ entertainment especially musical performance’ It was only in the beginning of the 18th century that the word was used to connote for broader meaning of economic activities.

French economist Cantillon’s (1755) *Essai Sur/ a nature du commerce on general*, probably written a generation before its publication date, drew attention and coined the word entrepreneur as a technical term. He defined entrepreneur as “an agent who buys means of

production at certain prices in order to combine them into a product that he is going to sell at prices that are uncertain at the moments at which he commits himself to his cost”.

The entrepreneur in Schumpeter's (1934) theory see the potentiality, profitable opportunity and exploit them. The entrepreneur's motivation for profit is based not merely on his desire to raise consumption standard but also on such non hedonistic goals as the desire to find a private dynasty. The will to conquer in the competitive battle and the joy of creating, he tries to maximise his profits by innovations. His unique characteristic is that he gets satisfaction from using his capabilities in attacking problems.

The physiocratic economists of the later eighteenth century, such as Quesnay and Baudeau (1990) called the persons engaged in agriculture as entrepreneur. Since the physiocrats thought that only the land was a source of social product, this puts the entrepreneur, in a key position. In the sphere of agriculture, Baudeau credited the entrepreneur with all the essential characteristics of risk taking and the innovation proneness.

Thus by 1800 the French economists had given special meaning to entrepreneur and entrepreneurship with differences arising largely from the characteristics of the sector of the economy that chiefly attract their attention.



Those economists interested in government saw the entrepreneur as a contractor, the specialists on agriculture as a farmer and the proponents of industry as a risk taking capitalists.

Gordon (1961) stated that the entrepreneurs were not simply innovators in the sense of innovators, they were the men with will to act, to assume risks and to bring about change through the organisation of human efforts.

Mc Clelland (1961) pointed out that the man who organised the firm and/or increased its productive capacity was an entrepreneur.

Hagen (1964) described the entrepreneur as an economic man who tries to maximise his profits by innovations. Innovations involve problem solving and he gets satisfaction from using capabilities in attacking problems.

Liebenstin (1968) defines entrepreneur as an individual or a group of individuals having four major characteristic connections of different markets, capability of making up for market deficiencies (gap filling). 'In-put completing' and creation and expansion of time binding input transforming entities.

Joshi and Kapur (1973) described farm entrepreneur as the person who thinks, organises and operates the business and is responsible for the results, that is losses and gains from the business. He is a pioneer in organising and developing the farm.

Leeds and Stainton(1978) defined entrepreneur as a person who initiates production, takes decision, bears risks, involves and organises and co-ordinate the other factors.

Cole (1979) described an entrepreneur as a decision maker.

Hoy (1987) noted that a popular image of rural entrepreneur was"..... independent natural risk taking, achievement oriented, self confident, optimistic, hard working and innovative".

*The* Oxford English Dictionary (1987) defined an entrepreneur simply as the director or manager of public musical institution and who gets up entertainments especially musical performance.

Patel (1987) defined entrepreneur as the person who catalyses resources, risks, and manages them so as to establish a viable sustained employment generating entity.

Samiuddin (1987) defined entrepreneur as the one who detects and evaluates the new situation in his environment and directs the making of such adjustments in the economic systems as he deems necessary.

Dixit (1988) said that a true entrepreneur was one who germinates the concept, takes initiative, seizes the opportunity, bears the risks, promotes the organisation and manages it in spite of odds to achieve the set goals.

According to Hamilton (1990) Entrepreneurs were risk takers, not wild eyed gamblers but rational individuals who considered their knowledge and skills as dramatic risk reduction elements. Their efforts augment their money resources with mind and muscle, their primary resources. Further he described entrepreneurship as a state of mind.

Khan (1991) stated that entrepreneurs are the men of skills, experiences, dexterity, expertise and flair. According to him entrepreneur in small scale sector are those who perform three important aspects of

entrepreneurial activities viz, perception of an opportunity, setting up an industrial enterprise to exploit it and to make the unit a going and growing concern.

*The Oxford English Dictionary* (1993) defined entrepreneur as “One who undertakes an enterprise especially contractor acting as intermediary between capital and labour”.

Sarmah and Singh (1994) reported that entrepreneur is one who can transform new materials into goods and services, who can effectively utilise physical and financial resources for creating wealth, income, and employment, who can innovate new products, standardise or upgrade existing products for creating new markets and new customers.

### **2.1.2 Entrepreneurship**

Entrepreneurship is not a definable abstract of human quality but a series of actions. It comprises of several factors.

Agarwal (1975) defined entrepreneurship as the ability to identify the resources to perceive their economic potential, the ability and willingness to utilise these

resources and to invest in their development deferring immediate rewards in favour of investment.

Sharma (1975) stated that entrepreneurship refers to a set of attributes which the entrepreneurs possess and a set of activities which they perform in relation to expansion of their units.

According to Tandon (1975) the necessary skill for the performance of various functions can be acquired and inculcated among the entrepreneur provided he possess certain qualities identifiable through his overt behavioural manifestations.

Rao and Mehta (1978) described entrepreneurship as a creative and innovative response to environment. Such a response can take place in any field of endeavour- business , industry, agriculture, education and social work. According to them defining characteristics of entrepreneurship is doing new things or doing things that are already being done in a new way. These definitions also support the Schumpeters idea of entrepreneur as innovators.

According to Cole (1979) entrepreneurship is a purposeful activity of an individual or a group of associated individuals undertaken to initiate, maintain or organise a

profit oriented business unit for the production or distribution of economic, goods and services.

Mishra and Sinha (1980) opined that entrepreneurship is a quality which can be acquired by an individual.

De (1986) stated that entrepreneurship is a package of personality characteristics of entrepreneurs.

Watkins and Allen (1987) defined entrepreneurship qualitatively as "..... a characteristic or set of characteristics associated with persons who possess the drive, capabilities and organisational skills to obtain and manage the variety of inputs necessary to successfully undertake a venture.

Reddy (1989) pointed out that entrepreneurship is a mental urge to take risk in the face of uncertainties and intuition and capacities of seeing things in a way which afterwards proves to be true.

Wortman Jr.(1990) opined rural entrepreneurship as a means to improve the quality of life in

rural areas by providing goods and services to rural communities.

Khan (1991) opined that entrepreneurship is the basic business concern of a successful entrepreneur.

Vijaya Lakshmi (1992) in her study reported that entrepreneurship is the ability to coordinate and organise, manage and maintain and reap the best out of even the worst situation.

Sarmah and Singh (1994) are of the opinion that entrepreneurship is essentially a function, creativity and behaviour manifestation of a person for shifting resources from areas of low productivity to higher productivity.

Sheela (1994) defined entrepreneurship as the ability to discover an investment opportunity and to organise a money making enterprise contributing to real economic growth.

Desai (1995) has opined entrepreneurship as the propensity of mind to take calculated risks with confidence to achieve a predetermined business or industrial objective.

In substance it is the risk taking ability of the individual broadly coupled with correct decision making.

Jain (1996) defined entrepreneurship as the ability to discover, create, or invent opportunity and exploit them to the benefit of the society which in turn brings prosperity to the innovator and his organisation.

## ***2.2. Functions of Entrepreneur***

Different scholars define the functions of an entrepreneur differently. Schumpeter (1934) as a function of group level patterns, Hoselitz (1952) defines it as a function of managerial skill and leadership, Harbinson (1952) as a function of organisation building capacity, Mc Clelland (1961) as a function of high need Achievement (n' Ach), Hagen (1962) as a function of status withdrawal. Leibenstein (1968) as input completing and gap filling, Kunkal (1970) as a function of social, political and economic structure and Young (1971) as a function of group level pattern.

According to Schumpeter (1934) economic development can take place only due to innovation in otherwise 'system in equilibrium'. The innovations may relate to new product, technology, new sources of raw material, new market or new organisation. An entrepreneur



is the agent who works as a catalyst to activate these events, he is considered as an innovator.

Harbinson (1952) considers the skill of organisation building critical to entrepreneurship, where the entrepreneur multiplies himself by effectively delegating the authority, who in the able of able deputies may not fructify.

Hoselitz (1952) considers managerial skills and leadership as the primary factors, and financial skills as of secondary importance for entrepreneurship. However subsequently he added risk bearing as also the quality of entrepreneurship.

(1961)

Mc Clelland<sup>1</sup> like Hoselitz (1952), ascribes the innovative characteristics to entrepreneurial role. According to Mc Clelland if there is no uncertainty in a venture, no risk, therefore no entrepreneurship is involved. Thus innovativeness and risk taking are critical and he found them to be related to the need for achievement, which depends on child rearing practices of a particular culture.

Hagen (1962) in explaining social change recognises entrepreneurship as an important agent who originates from distinctive groups in societies. He states that 'creative innovation' and change are the fundamental characteristics of economic growth. Such groups emerge

when they experience 'withdrawals of status respect for socio political reasons, which squares well with n Ach of Mc Clelland. But Hagen considers social change as a slow process extending over a few generations, which therefore does not provide measures for backward countries.

Leibenstein (1968) distinguishes between routine entrepreneurship and new type of entrepreneurship and finds that gap filling and input completing as the most important functions of entrepreneurship and states that training may help improve entrepreneurial performance.

Kunkel (1970) has elaborated the theory of supply of entrepreneurship through behaviouristic model and considers that minority groups, but not all of them, supply larger proportions of entrepreneurs in a given society.

Kilby (1971) after reviewing the major theories of entrepreneurship suggests that technology and managerial competence are essential for entrepreneurship. He also identified thirteen entrepreneurial functions and grouped them into four groups namely, exchange relationship, political administration, management control, and technology and that these functions would vary according to the size, type and setting of an enterprise, and that these functions could be augmented through training and education.

Young (1971) accepts group or cluster of persons rather than individuals to qualify as entrepreneurs. Such a group combines the factors of production in new ways and are called entrepreneurs. He accepts Schumpeterian definition, but include the family background, experience, and membership of reactive groups and as reflection of general cultural values as necessary ingredients.

### ***2.3. Determinants of entrepreneurial behaviour***

Alexander (1960)in his study on Turkish entrepreneurs showed how a background in one occupation led one to become an entrepreneur in the same line of working.

Yusif (1962) evaluated the role of business entrepreneurs in the Lebanon economy and held that the entrepreneurs could not contribute much to the economy. Lack of supportive measures such as adequate and timely finance etc., affected their rational expectation of profit and also their awareness of social responsibility.

Singh (1966) outlined four important functions of entrepreneurs, viz. motivation for achievement, skill required for productive purposes, ability to make decisions and desire to introduce improvement in techniques of production.

Christopher (1969) listed out the characteristics of entrepreneurs as perseverance and hard work, risk taking ability, high aspiration, willingness to learn, dynamic and creative, adaptable, innovative, good salesmanship, ability to win friends and overcome crisis, initiative, self confidence, will power, determination to succeed, pleasing personality, composed and tactful, high integrity, responsible excellence in work and perception of time.

Gaikwad and Tirupathi (1970) found that socio economic background and the economic factors of entrepreneurs had played important role in the process of entrepreneurship formation.

Collins and Moore (1970), Shapero (1975) and Taulouse (1980) stressed the importance of personality factors, psychodynamic characteristics and socio cultural background of an executive in fostering entrepreneurial behaviour.

Ackoff (1970) stressed decision making and strategy factors as promoting entrepreneurship.

Hariss (1970) studied 250 private firms in a saw milling, furniture making and other urban based industries in Nigeria. He found that entrepreneurial development depended upon several factors such as education, work experience, technical information, profitability, access to capital and management.

Singh (1970) reported that the business entrepreneurs were exposed to more economic opportunities than agricultural entrepreneurs. He also reported that the agricultural entrepreneurs had positive rating of their economic progress, liking for their present economic progress, liking for their present occupation, preference for their present occupation preference for agriculture as a profession of their sons, if they so desired, a positive attitude towards modernisation and individual farming for the growth of agriculture in the country in contrast to the traditional and unsuccessful agricultural entrepreneurs, thus clearly indicating the role played by entrepreneurs in development activities of farmers.

Nandy (1973) in his comparative study of entrepreneurs and non entrepreneurs from two sub cultures, showed that the need for achievement, power, efficacy and overall modernity were positively correlated with entry into an enterprise, thus taking up an entrepreneurial role.

S.I.E.T (1974) study revealed that economic gain was the most important reason for starting an enterprise followed by ambition, social prestige and social responsibility in that order. Younger age, formal education, urban background, experience, high level of aspiration, risk taking and adoption propensity were some of the characteristics that were positively associated with the quality of entrepreneurship.

Agarwal (1975) while reviewing the entrepreneurial functions stated three main description of entrepreneurs viz., the aspect of coordination, planning and uncertainty bearing or innovation.

Gaikwad (1975) observed that all entrepreneurs were persons with initiative, drive, hard work though majority of the entrepreneurs had no technical knowledge.

Tandon (1975) said the entrepreneurs must possess the following important qualities-capacity to assume risk and possessing self confidence, technical knowledge, alertness to new opportunities, willingness to accept change and ability to initiate and ability to marshal resources and ability of organisation and administration.

Mathai (1978) has listed technical risks, economic or financial risk, social risks and environmental risks as the major risks an entrepreneur has to face. An entrepreneur should be aware of these risks and should be willing to face them.

Rao and Mehta (1978) enlisted psychological factors in entrepreneurship viz., need for achievement, need for influencing others, sense of efficiency, risk taking, openness to feed back and learning from experience, need for independence, hope of success, time orientation completion and collaboration, flexible authority relationship, social consciousness and dignity of labour.

Singh (1978) enlisted a set of significant characteristics viz. need for achievement, need for influence, high sense of efficiency, change proneness degree of self perceived readiness, overall modernity and financial background.

Ramakrishnan (1979) enlisted the characteristics of entrepreneurs viz., high level of aspirations, managerial competence, self confidence, leadership qualities, risk taking ability and independence in thought and action.

Nadkarni and Rao (1982) pointed out that the spirit of entrepreneurship could be nurtured to some extent by an appropriate pattern of education and training programme. A favourable environment in the family had contributed to the choice of entrepreneurial career.

Nandapurkar (1982) developed an objective instrument to measure the entrepreneurial behaviour of small farmers by taking ten components viz., innovativeness, ability to coordinate farm activities, achievement motivation, decision making ability, information seeking, assistance of management services, cosmopolitaness, knowledge of farming enterprises, risk taking ability and leadership ability and found that assistance of management services and achievement motivation as important factors influencing entrepreneurial behaviour of small farmers.

Sethy (1982) reported that variables like formal education, farm income, risk taking willingness, feed back,



personal achievement and influence motives substantially contributed to the acquisition of knowledge of improved rice technology by the farm entrepreneurs.

Raghavacharyalu (1983) reported that the entrepreneurial behaviour of small farmers differed significantly with age and caste groups. Small farmers who had high formal education, high social participation, more farming experience, comparatively big farm size, high cropping intensity and high income had high entrepreneurial behaviour. Contact with extension agency, urban contact and media participation were found to influence the entrepreneurial behaviour of small farmers.

Sethy *et al* (1984) opined that the variables like social participation, agricultural implements, personal efficiency, risk taking willingness, feed back, psychological modernity, personal achievement motivation, influence motivation, knowledge about the technology and farm educational exposure were important entrepreneurial characteristics which promoted adoption of improved agricultural technology.

De (1986) opined that only three factors such as socio-economic status, innovation orientation and entrepreneurship which had significantly contributed for the farmers progressiveness.

Deivasenapathy (1986) reported that educational level and family background of the entrepreneurs did not influence their career success whereas family support, and previous job experience influenced their entrepreneurial success.

Singh and Sehgal (1986) listed out the characteristics of entrepreneurs viz., high degree of achievement motivation, capacity to take calculated risk, a positive image of one's own abilities and achievements, realistic self assessment of one's strength and weakness, problem solving approach, initiative and drive, ability to think independently, resistance and ability to cope with set backs, imagination and creative ability and change proneness.

Dixit (1988) in his study reported that Indian entrepreneur both at rural and urban centres with guts, skills and ambition did exist, but qualities like motivation, sense of commitment, business morality were invariably absent in small entrepreneurs.

Murthy (1989) reported that in most cases of entrepreneurs the low level of education had not deterred them from taking to entrepreneurship. He further observed

that a rapid and balanced economic growth is possible only through entrepreneurial skills.

Ganguly (1990) stated that agro based industries provided an excellent nexus in promoting integrated development of agriculture and industry and in transferring a stagnant rural economy into a dynamic and buoyant economy. It provided local entrepreneurship, generated employment and also checked the concentration of economic power through diffusion of ownership of means of production.

Himachalan (1990) expressed that there should be suitable organisational arrangements for disseminating information about appropriate technology to the prospective entrepreneurs and the entrepreneurs should be given proper training in the technology to be adopted.

Muthayya and Loganathan (1990) reported that joint family seem to take to self employment than those in single family probably because of the inbuilt security provided in the joint family in the event of any failure.

Negpal (1990) expressed that to keep the entrepreneurs fed with the updated technology, innovative financing methods like venture capital may be useful.

Perumal *et al* (1990) pointed out that high economic orientation coupled with reasonably high risk orientation were the factors responsible for the entrepreneurial venture. A considerable percentage of respondents had high level of experience, majority belonging to high income category encouraging level of social participation, use of mass media to a greater extent and majority of the farm women have attended specialised and skill oriented trainings.

Rao (1990) reported that the potentiality of women entrepreneurship, its strength lies in the fact that youthful members between 15 to 45 age group constitute 49 percent in rural areas and 52.83 percent in urban areas. Seventy nine and 45 percent of women in rural and urban areas are classified as illiterates.

Joy (1991) opined that the success of entrepreneurs showed that entrepreneurship was born out of a passion for creative activity that improved the quality of life of the entrepreneur himself and of members of the society in which he operated.

According to Paranjyothi and Sujatha (1991) the process of entrepreneurship development fall into three

phases (1) stimulatory phase (ii) support phase and (iii) sustaining phase. Training is necessary to coordinate the phases of entrepreneurship development at rural levels, because it aims at provision of appropriate training, better integrated plan for resource mobilization, utilization and tying up of institutional facilities for marketing of the products particularly with target group.

Porchezian.(1991) found that farmers who had more farming experience, annual income, social participation, scientific orientation, innovativeness and maintaining high self reliance, more economic motivation, high degree of credit orientation, overall modernity with diversified occupation were found to have more entrepreneurial behaviour.

Muthukrishnan (1993) expressed that entrepreneurial requisites are to be achieved primarily through motivation, skills acquired and workable planning and knowhow in the area engaged and of course the strength to mobilise finance needed to sustain the growth.

Sarmah and Singh (1994) in their study on determinants of entrepreneurship in agriculture revealed that education, social participation, farm mechanisation and socio-economic status of marginal farmers were significantly

correlated with the level of knowledge and extent of adoption of recommended practices of rice cultivation.

Sabbarwal,(1994) in a study on determinants of entrepreneurial start ups found that more than one fourth of Indian entrepreneurs have emerged from families of salaried employees, civil servants and professionals which indicate that the favourable economic scenario is beginning slowly but enduringly influence occupational choices in India. It was also observed that a healthy industrial climate rather than psychological or sociological variables would determine the course of entrepreneurial development in the country.

Matani (1995) stated that farming entrepreneurship can bring socio-economic salvation to Indian society.

## **2.4. Vocational Choices or Aims**

In our society there is no single situation which is potentially capable of giving some satisfaction to all levels of basic needs as the occupation.

Eltan (1967) found that freshmen who choose vocation in the fields of business and finance are more

independent, more tolerant of ambiguity and more non authoritarian.

As Morse and Weise (1968) indicated in their study, working does not simply function as a means of earning a livelihood. Any way even if there is no economic necessity for men to work, most men may work. It is through the producing role that most men tie into society and for this reason they find producing role important for maintaining their sense of well being.

Andrews (1973) in his study on college students found that self concept is a significant factor in an individual's choice of a vocation, preparation of a career and participation in the field of work.

Leonard *et al* (1973) established that persons high in self esteem make second vocational choices that are consistent and persons low in self esteem make second choices that are consistent about as often as they make choices that are inconsistent.

Arthur (1977) has expressed a positive relationship between self esteem and the tendency to aspire to vocations with higher prestige.

Zuckerman (1980) in a study done on college students revealed that age, grade, religion, upbringing and affiliation, college majors, mother's educational attainment were all significant predictors. Father's educational attainment, parents occupations and women's birth order and self esteem were not related to goals asserted.

Holland (1981) in his study on self concept and vocational development found that there is positive correlation between self concept and career attitude.

## ***2.5. Personal and socio-psychological factors influencing entrepreneurial behaviour.***

### **2.5.1. Personal variables**

#### **2.5.1.1. Education**

Pathak (1972) selected 12 units in different lines of manufacture and studied their problems at three levels of entrepreneurial development, namely inception, operational and expansion . He found positive association between these stages and the levels of education.

Babu (1978) observed that entrepreneur with less or no education were usually faced with a situation in which traditional values and technology turned to be impracticable or less beneficial and more yielding modern techniques became short lived or difficult for acceptance.



He felt that education would enable the entrepreneurs to adjust to such conflicting situations easily.

Rao (1983) studying the problems of technically trained entrepreneurs reported that they showed a higher level of entrepreneurship than what an entrepreneur with no such training did.

Deivasenapathy (1986) reported that educational level of the entrepreneurs did not influence their career success.

Murthy (1989) reported that in most cases of entrepreneurs the low level of education had not deterred them from taking to entrepreneurship.

Akbar (1990) found that values related to education and occupation are influencing entrepreneurship.

Porchezian (1991) found that educational status was non significantly related with the entrepreneurial behaviour of farmers.

Sarmah and Singh (1994) in their study on determinants of entrepreneurship in agriculture found that

education was significantly related with the adoption of improved agricultural practices.

Zahir (1994) found in his study that new generation of entrepreneurs possess better educational qualification and considers it as an important factor for the success of any business venture in changing environment.

#### 2.5.1.2. Nativity

Killing (1969) observed the reflection of regional elements in Bengali entrepreneurs.

Nandi (1973) observed that, while some necessary traits of good entrepreneurs were generally found in all regions and cultures, some other traits varied from regions to region and culture to culture in their importance.

The S.I.E.T (1974) study revealed that urban background has positive association with the quality of entrepreneurship.

Agarwal (1975) showed that difference between different geographical regions in culture, society and

personality revealed difference in goals, modes of achievement and types of enterprises of entrepreneurs.

Koppel and Peterson (1975) did not find differences in terms of regional elements.

#### 2.5.1.3. Marks obtained; O.G.P.A; O.G.P.A.; in work experience

A positive relationship between self esteem and academic achievement has been reported in several studies like Wiedman *et al* (1972) and Yates (1975).

Zuckerman (1980) in his study on self esteem personal traits and college women's life goals found that grade obtained is a significant predictor of the goals asserted.

Thomas and Sanandaraj (1982) found that the correlation between self esteem and academic achievement is significant statistically.

#### 2.5.1.4. Father's occupation, mother's occupation

Babu (1978) found that occupation of one's father and grand father had great influence on the

entrepreneur's choice of career and his business performance.

Zuckerman (1980) observed that parents occupation is not related to the goals asserted by college women.

Reddy and Reddy (1985) did not support the view that sons of industrialists and business men are more successful in running their units.

Chacko (1990) observed that occupational choice of sons is more influenced by their fathers.

Zahir (1994) found that the entrepreneurs with business family background were successful in their ventures

## **2.5.2. Psychological variables**

### 2.5.2.1. Self confidence

✓ Christopher (1969) Tandon (1975) Ramakrishnan (1979) have all opined that self confidence as one of the characteristic trait of entrepreneurs and that it reflects on the entrepreneurial behaviour of an individual.

#### 2.5.2.2. Persuasiveness

Pathak (1972) recognised net work of relations as an essential factor in entrepreneurial development.

Rao and Mehta (1978) listed need for influencing others as one of the psychological factors that influence entrepreneurship.

#### 2.5.2.3. Self esteem

Leonard et al (1973) established that persons high in self esteem make second vocational choices that are consistent about as often as they make choices that are inconsistent.

Arthur (1977) has expressed a positive relationship between self esteem and the tendency to aspire to vocations with high prestige.

Fairly strong correlation was found between self esteem during high school and later educational and occupational attainment by Batchman and O'Marcy (1977)

#### 2.5.2.4. Thoughtfulness

The researcher did not come across any review relating entrepreneurship and thoughtfulness. Hence related studies are quoted.

Andrews (1973) in his study on college students found that people search out vocations that are compatible with their personalities.

Venkatapathy (1980) studied inter-generational career mobility of entrepreneurs and found that presence or lack of certain psychological factors determined the success or failure of these entrepreneurs.

#### 2.5.2.5. Selfreliance

Elton (1967) found that freshmen who choose vocations in the field of business and finance are more independent, more tolerant of ambiguity and more non authoritarian.

Rao and Mehta (1978) enlisted need for independence as one of the psychological factors that influence entrepreneurship. They have opined that personal efficiency, self image and sense of personal responsibility as some of the attributes which promote entrepreneurship.

Singh (1978) has enlisted high sense of efficacy and degree of perceived readiness as some of the significant characteristics of entrepreneurs.

Sethy *et al* (1984) found that personal efficiency is one of the entrepreneurial characteristic that promote adoption of improved agricultural technology.

Porchezian (1991) found that self reliance as positively and significantly related with entrepreneurial behaviour.

#### 2.5.2.6. Attitude towards self employment

Dilic (1969) Studied the general attitude of youth towards rural way of life and concluded that contrary to traditional view youth have considerable subjective achievement of agricultural profession.

Lekshminarayanan (1978) found that agricultural students had favourable attitude towards agriculture whereas non agricultural students had unfavourable attitude towards agriculture.

Shanmugham (1980) found that non school going rural boys had more favourable attitude towards agriculture than school going rural boys.

Natarajan and Vijayaraghavan (1991) reported that in general rural boys had a favourable attitude towards agriculture.

Pradeepkumar (1993) found that almost all the respondents had more favourable attitude towards self employment in agriculture and allied fields and this was shared almost equally by male and female category.

Jayalekshmi (1996) found a positive and significant relation between attitude towards self employment and entrepreneurial behaviour of rural women.

#### 2.5.2.7. Innovation proneness

Christopher (1969) listed out innovativeness as a distinctive character of entrepreneurs.

Rao and Mehta (1978) indicated innovativeness as one of the attributes of entrepreneurs. According to them defining characteristics of entrepreneurship in doing new things or doing things that are already being done in a new



way. This supports Schumpeter's idea of entrepreneurial behaviour of small farmers.

De (1986) opined that innovative orientation, entrepreneurship and socio economic status to significantly contribute for the farmer's progressiveness.

Pantulu (1989) listed innovativeness as one of the characteristic of entrepreneurs.

Rao and Alagendhi (1989) in his appraisal of relative performance of entrepreneurs highlighted innovative ability as one of the entrepreneurial traits.

#### 2.5.2.8. Attitude towards competition

From a psychological point of view competition involves a goal which being scarce cannot be shared by or appears unsharable to the individual concerned.

Hammond and Goldman (1961), Ryan and Lackie (1965), Clark (1965), and Clifford (1972) found that competition enhanced achievement.

Rao and Mehta (1978) enlisted competition and collaboration as some of the factors that influence entrepreneurship.

### **2.5.3. Sociological variables**

#### 2.5.3.1. Sex

Heggade (1982) stated that women's participation in economic decision making was a vital means by which their economic dependency and social inequality could be removed. Their participation in decision making resulted in increasing the employment opportunity for women, increasing the produce and income level of the community, reducing the exploitative elements in the economic system, co-operating the productions, marketing, and distribution.

Akbar (1990) found that sex distribution of family members as not consequential to the levels of entrepreneurship.

Rao (1990) reported that the potentiality of women entrepreneurship, its strength lies in the fact that youthful members between 15 to 45 age group constitute 49 percent in rural areas and 52.83 percent in urban areas.

Natarajan and Thenmozhy (1991) reported that women possessed entrepreneurial skill to start an enterprise.

Gengaje and Setty (1992) expressed that the only meaningful approach to enhance the economic and social status of women is through self employment and income generating activities.

Singh (1993) concluded that the factors impinging on entrepreneurial manifestation of women are no different from those affecting men entrepreneurs.

#### 2.5.3.2. Sociability

Eltan (1967) reports significant difference in temperament and aptitude variable among freshman making different career choice.

Christopher (1969) listed pleasing personality as one of the characteristic of entrepreneurs.

Mathew (1969) in his study on personality patterns of college students specialising in different fields found that agriculture students are objective, sociable, emotionally stable and friendly.

Spodek (1969) found that in the case of the caste traders, who entered into the textile industry after the non-Banias had done it, contacts and close networks made further expansion of their firms possible.

Singer (1972)'s study revealed the possibility of wide contacts and networks contributing to entrepreneurial development.

#### 2.5.3.3. Religion

Berna (1960) studied fifty two medium sized manufacturing firms in Madras and Coimbatore and found that caste and tradition played little role in the emergence and expansion of entrepreneurship and also suggested that favourable government policies will further help to diversify the entrepreneurial base.

Medhora (1965) has cited examples of successful entrepreneurs among Hindus, the religious majority in India.

Berna and Hazlehurst (1966) in their investigation about entrepreneurs discovered that caste was less important in determining entry into entrepreneurial endeavour.

Morris (1967) held that Hinduism and Hindu castes only limited the scope of economic opportunities but did not constitute specific form of social structure, which could hinder modern capitalism.

Gaikwad and Tripathi (1970) found that non business communities do better because trading communities found industrial production carrying more risk and long gestation period as compared to trade.

~~Mines~~ (1972) and ~~Singer~~ (1972) in their respective studies on Tamil Nadu entrepreneurs tried to show an "inner-worldly" aspect of Hinduism and Islam respectively which could promote modern capitalism.

Owens and Nandy (1978) found that n Ach was not higher in the successful entrepreneurs belonging to Mahisyas in Hourah as compared to those from higher castes.

Raghavacharyalu (1983) analysed that entrepreneurial behaviour of small farmers differed significantly with caste groups.

Singh (1985) found that entrepreneurs were by and large formed upper caste groups.

Pantulu (1989) observed religion, community and caste to which a person is affiliated to serve as one of the contributing factors to entrepreneurship.

Akbar (1990) in his study found that Muslims lacked the entrepreneurial spirit of diversification and mobility into other industrial opportunities. He also found that religious observance rituals and festivals and values related to education and occupation were found associated with the degree of entrepreneurship.

#### 2.5.3.4. Management Orientation

Tandon (1975) stated that entrepreneurs must possess ability of organisation and administration.

Agarwal (1975) has opined, coordination and planning as some of the important entrepreneurial functions.

Ramakrishnan (1979) enlisted managerial competence as one of the characteristics of entrepreneurs.

Rajagopalan (1989) enlisted organisational skill as one of the factors that influence entrepreneurship.

Akbar (1990) found that managerial skill as a critical characteristic that influence entrepreneurial competency.

Shilaja (1990) found that management orientation of farm women in less progressive villages showed positive and significant relationship with mixed farming productivity.

Vijayalakshmi (1992) in her study reported that entrepreneurship is the ability to coordinate and organise, manage and maintain and reap the best out of even the worst situation.

#### **2.5.4. Economic variables**

##### **2.5.4.1. Economic Motivation**

Gaikwad and Tripathi (1970) found that socio-economic background and the economic factors of entrepreneurs had played important role in the process of entrepreneurship formation.

Singh (1970) reported that the business entrepreneurs were exposed to more economic opportunities than agricultural entrepreneurs.

S.I.E.T (1974) study revealed that economic gain was the most important reason for starting an enterprise.

Perumal *et al* (1990) pointed out that high economic orientation coupled with reasonably high risk orientation were the factors responsible for entrepreneurial venture.

Porchezian (1991) found that economic motivation and entrepreneurial behaviour are positively correlated.

#### 2.5.4.2. Annual income

Singh (1970) reported that agricultural entrepreneurs had positive rating of their economic progress.

Babu (1978) has reported that families with high income had an advantage in providing the prospective



entrepreneur with initial capital than families with low income.

Singh (1978) viewed financial background as a significant characteristic of entrepreneur.

Sethy (1982) reported that farm income contributed to acquisition of knowledge of improved rice technology by the farm entrepreneurs.

Raghavacharyalu (1983) revealed that small farmers with high income had high entrepreneurial behaviour.

De (1986) opined that socio-economic status significantly contributed to farmers progressiveness.

Murthy (1989) reported that a rapid and balanced economic growth is possible only through entrepreneurial skill.

Porchezian (1991) found that annual income of farmer and their entrepreneurial behaviour are positively correlated.

#### 2.5.4.3. Credit orientation

Porchezian (1991) found that farmers who had high degree of credit orientation are high in entrepreneurial behaviour also.

### **2.5.5. Technological variables**

#### 2.5.5.1. Technical Competency

Berna and Hazlehurst (1966) found that technical knowledge is an important determinant that influence entry into entrepreneurial endeavour.

Gaikwad (1975) observed that majority of entrepreneurs had no technical knowledge.

Tandon (1975) observed technical knowledge as an important quality of an entrepreneur.

Mathai (1978) found that risk of not knowing the technical details is one of the risks a rural entrepreneur has to face.

Misra and Sinha (1980) studied 150 big, small and marginal farmers of five villages of Purnea district in Bihar. They observed that social status variables consisting

of knowledge of technology and farm educational exposure and human resource variables consisting of owning responsibility and achievement motivation had significant bearing on entrepreneurship.

Sethy (1982) observed that knowledge about the technology is an important entrepreneurial characteristics that promoted adoption of improved agricultural technology.

Rao (1983) while studying problems of technically trained entrepreneurs, reported that they showed a higher level of entrepreneurship than those entrepreneurs with no such training did.

Pantulu (1989) classified technical qualification as one of the socio-demographic variables that tend to influence entrepreneurship.

The conceptual frame work of the study to be empirically verified is presented in fig.1.

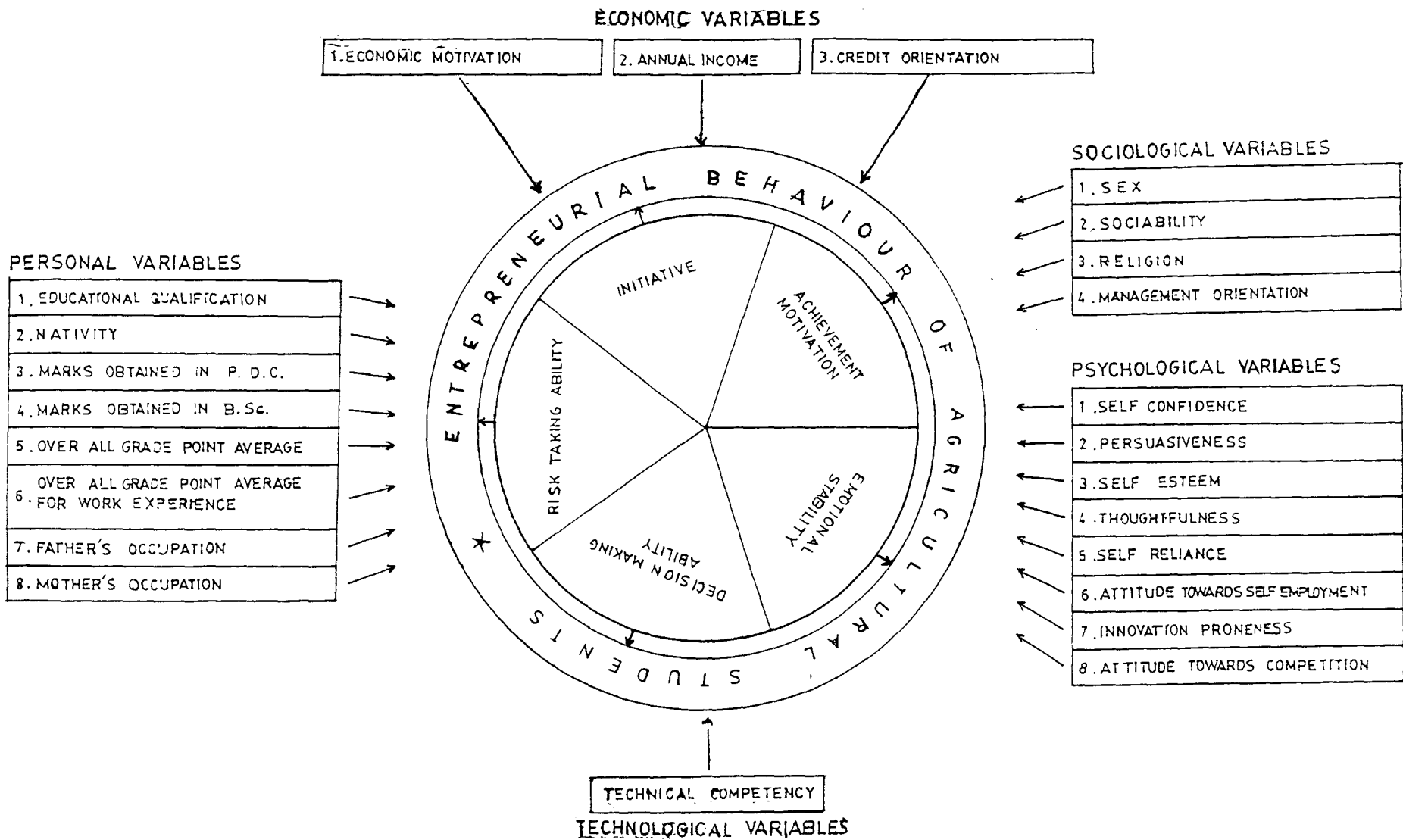
## **2.6. Hypotheses of the study**

Keeping in view of the objectives of the study and the review of literature, the following hypotheses were framed for empirical validation in the present study.

1. There will be no significant relationship between selected personal, sociological, psychological, economic and technological characters and entrepreneurial behaviour of undergraduate students.
2. There will be no significant relationship between selected personal, sociological, psychological, economic and technological characters and entrepreneurial behaviour of postgraduate students.
3. There will be no significant relationship between selected personal, sociological, psychological, economic and technological characters and entrepreneurial behaviour of unemployed graduates.
4. There will be no significant relationship between selected personal, sociological, psychological, economic and technological characters and entrepreneurial behaviour of male students.
5. There will be no significant relationship between selected personal, sociological, psychological, economic

and technological characters and entrepreneurial behaviour of female students.

6. There will be no significant contribution of the selected personal, social, psychological, economic and technological characters to the variation in entrepreneurial behaviour of undergraduate students.
7. There will be no significant contribution of the selected personal, social, psychological, economic and technological characters to the variation in entrepreneurial behaviour of postgraduate students.
8. There will be no significant contribution of the selected personal, social, psychological, economic and technological characters to the variation in entrepreneurial behaviour of unemployed graduates.
9. There will be no significant contribution of the selected personal, social, psychological, economic and technological characters to the variation in entrepreneurial behaviour of male students.
10. There will be no significant contribution of the selected personal, social, psychological, economic and technological characters to the variation in entrepreneurial behaviour of female students.



**FIG. CONCEPTUAL MODEL OF THE STUDY**

# METHODOLOGY

### 3. METHODOLOGY

This study was undertaken with the main objective of identifying the factors which are conducive for the entrepreneurial behaviour of agricultural students.

In this chapter general description of the methods and procedures followed in the conduct of the research study are explained under the following major heads.

1. Research design.
2. Locale of study.
3. Selection of respondents.
4. Operationalisation and measurement of dependent variable.
5. Operationalisation measurement and screening of independent variables.
6. Identification and ranking of other factors.
7. Collection of data.
8. Categorisation of respondents.
9. Statistical methods and tools.



### **3.1. Research design**

After careful analysis of available literature and keeping the objectives in view, more of qualitative and attitudinal variables were selected for the study. Most of the selected variables were of *expost-facto* in nature and the researcher had very little chance to control them. Hence an *expost facto* research design was used for the present study.

According to Kerlinger (1964) *expost-facto* research is a systematic, empirical enquiry in which researcher does not have direct control over independent variables, because their manifestations have already occurred or because they are inherently not manipulable. Inference about relations among variables are made, without direct intervention, from concomitant variation of independent and dependent variables.

### **3.2. Locale of study**

The Kerala Agricultural University came into existence in February 1971 under the 'Kerala Agricultural University Act 1971' by the state legislature.

Courses leading to Bachelor's degree, Master's degree and Ph.D. degree are offered by the university on Agriculture and allied subjects like Horticulture, Veterinary and Animal sciences, Fisheries, Co-operation and Banking

Kerala Agricultural University is offering undergraduate programme in Agriculture in three campuses and postgraduate programme in Agriculture in two campuses viz., College of Agriculture-Neeleswar, College of Horticulture-Vellanikkara, and College of Agriculture-Vellayani. Only the last two campuses were selected for the study since the college of Agriculture Neeleswar was started only recently (1995) and the undergraduate students are only in the second year.

### **3.2.1 College of Agriculture, Vellayani**

The college of Agriculture, Vellayani the oldest of the colleges now under the K.A.U, was in existence prior to the establishment of the university. The present B.Sc.(Agri) programme was alone there till 1961. Postgraduate courses leading to M.Sc.(Ag) were started in five subjects viz. Agronomy, Agricultural Botany, Agricultural Chemistry, Agricultural Entomology and Plant Pathology in 1961. Doctoral programmes were started in 1965 in Agronomy and Agricultural Chemistry. The college was then affiliated to University of Kerala. The Kerala

Agricultural University was established in 1971 and with effect from 1st February 1972, the college became a constituent institution of Kerala Agricultural University.

The college offers B.Sc., M.Sc., Ph.D. degree courses. B.Sc. is a four year course and M.Sc., 2 year course after obtaining B.Sc.(Ag), and Ph D course is of 3 years duration. Semester system of education is prevalent in the college.

### **3.2.2 College of Horticulture**

The College of Horticulture is situated in the main campus of the Kerala Agricultural University at Vellanikkara 10km away from Trichur town on Trichur-Palaghat road.

The college was established on 28<sup>th</sup> October, 1972 at Mannuthy and was shifted to the main campus at Vellanikkara during November, 1977.

In the beginning only 20 students were admitted for the B.Sc. (Hort) degree programme of four year duration (after pre-degree course). Subsequently the number of admission was increased.

B.Sc.(Ag) degree programme was also introduced from the academic year 1977-78 and 50 students were admitted for the course, excluding those sponsored from the other states and institutions. The syllabi for B.Sc.(Hort) and B.Sc.(Ag) degree programmes were unified from the academic year 1980-81. The intake of students for B.Sc.(Ag) was increased to 75 from the academic year 1983-84 onwards. Semester system of education was introduced from the academic year 1986-87.

Master's degree programme was started during the academic year 1976-77 in six disciplines namely, Horticulture, Agronomy, Agl.Botany, Agl.chemistry, Entomology and Plant pathology. For the academic year 1979-80, Ph.D. programme in Horticulture and M.Sc. programme in Agl.Engineering, plant Breeding and Agl.Economics were also commenced.

### ***3.3. Selection of respondents***

The respondents from three categories were included for the study. They were the undergraduate students, Postgraduate students and the unemployed graduates.

Students who had completed third year B.Sc.(Ag) course (College of Agriculture, Vellayani, and college of Horticulture, Vellanikkara) formed the undergraduate respondents for the study.

All the postgraduate students with a basic degree in Agriculture B.Sc. formed the postgraduate respondents for the study.

Unemployed graduates who have passed out from these two campuses were selected as the respondents in the third category.

<b>Table 3.1 Distribution of respondents in various categories</b>			
Sl. No.	Group	Number of students to whom schedule was given	Number of students who returned the schedule
1.	Undergraduate students	120	100
2.	Postgraduate students	123	100
3.	Unemployed graduates	150	50
Total		393	250

Undergraduate students:- Students who have completed third year B.Sc. (Ag) course from the two campuses formed the first category of respondents. All the students were given the questionnaire. Total number of students from the two campuses came to be 120. Out of them, 100 respondents gave the completed questionnaire.

Postgraduate students :- Postgraduate students who were on the role from both campuses formed the second category of respondents. The total number of respondents contacted was 123 of which 100 respondents returned the completed questionnaire.

Unemployed graduates :- Unemployed graduates who have passed out from these two campuses and who were not undergoing postgraduation were chosen as the third category. Mailed questionnaire were send to 150 respondents of which 50 respondents sent back the completed questionnaire . Thus the total number of respondents for the study was 250.

### ***3.4. Operationalisation and measurement of dependent variable***

The dependent variable selected for this study was entrepreneurial behaviour of agricultural students. Entrepreneurial behaviour is operationalised for the purpose

of this study as a set of characters associated with persons who possess the drive and capabilities to obtain and manage the variety of inputs necessary to successfully undertake a venture . The possession of such qualities are theoretically assumed to have an influence on a person's success as an entrepreneur. Here entrepreneur is operationally defined as a person who has the drive to initiate production, takes decision, bears risks, involves, organises and co-ordinates factors.

Nandapurkar (1982) developed an objective instrument to measure the entrepreneurial behaviour of small farmers by taking 10 components viz., innovativeness, ability to coordinate farm activities, achievement motivation, decision making ability, information seeking, assistance of management services, cosmopolitaness, knowledge of farming enterprises, risk taking ability and leadership ability.

Raghavacharyalu (1983) developed a scale to measure entrepreneurial behaviour using the method of equal appearing interval and the various components included in the scale were innovation proneness, decision making, achievement motivation, assistance of management services, risk taking ability, level of aspiration and locus of control . The same scale was used by Porchezian (1991) to study entrepreneurial behaviour of farmers.

Akbar (1990) developed a scale to measure entrepreneurship of Indian Muslims. His scale consisted of five dimensions, it included innovativeness / risk taking, back ground, managerial skills / gap filling, achievement/ socialisation, status withdrawal.

Jayalekshmi (1996) measured entrepreneurial behaviour of rural women using nine dimensions viz., decision making ability, economic motivation, risk taking ability, management orientation, self confidence, initiative, competition orientation, achievement motivation and innovativeness.

For the present study a scale was developed to measure the entrepreneurial behaviour of agricultural students using summated rating method (Likert 1932).

#### **3.4.1. Item generation**

As an initial step in the scale development all the possible items of relationship were collected by reviewing literature in the areas of entrepreneurship in various fields and in consultation with the experts in these fields. The critical incident technique suggested by Flanagan(1954) was also employed to collect items *from* field situation. This technique uses detailed description of



an individual's behaviour regarded as favourable or unfavorable in a given situation. It involved asking persons who are in the best position to observe for behaviour that they have noted that led to unusual success. The entrepreneurs who are well established in various fields like construction consultancy, nursery management, cut flower business, running private hospital were identified and were requested to describe their experience both favourable and unfavourable for success in entrepreneurship. These were utilised in the formation of items. Altogether 60 items were generated and theoretically classified under 6 dimensions namely, decision making ability, risk taking ability, level of aspiration, initiative, achievement motivation, and emotional stability.

### **3.4.2. Definition of the dimensions**

The major dimensions selected for the entrepreneurial behaviour scale were operationally defined as follows.

3.4.2.1. Decision making ability - is operationally defined as the degree to which the respondent justifies the selection of most effective means from among the available alternatives on the basis of scientific criteria for achieving maximum economic profit.

- 3.4.2.2. Risk taking ability - is operationalised as the degree to which the respondent is oriented towards risk and uncertainty and have the courage to face problems in starting an enterprise.
- 3.4.2.3. level of aspiration- This is operationalised as the over all assessment of the respondent's concern for wishes and hopes for his future.
- 3.4.2.4. Initiative -is operationally defined as the capacity of respondent to come forward on his own to take up some activities or enterprise.
- 3.4.2.5. Achievement motivation: This refers to the desire for excellence of the respondent to attain a sense of personal accomplishment.
- 3.4.2.6. Emotional stability: This is operationalised as having an evenness of mood, being optimistic, cheerful and calm.

### **3.4.3. Preliminary screening of items by relevancy rating**

The relevancy or otherwise of the items generated in the first step was established by sending these items to 150 judges with appropriate instructions (Appendix I). The judges comprised experts in the field i.e. teachers of K.A.U, teachers of other Agricultural universities and Agricultural Department officials.

They were asked to rate the degree of relevancy of each items in measuring the entrepreneurial behaviour of agricultural students on a three point continuum of 'most relevant' 'relevant' and 'least relevant' with corresponding scores of 3,2, and 1 respectively. Out of the 150 judges 90 responded (60 percent) within a period of one month. The scores for each items were summated over all the respondents and a relevancy index was worked out using the following formula.

$$\text{Relevancy index} = \frac{\text{Scores obtained} \times 100}{\text{Maximum possible score}}$$

Those items which secured a relevancy index of 70 and above were finally selected. Thus retaining thirty nine items for inclusion in the scale ( Appendix III).

#### **3.4.4. Item analysis**

Item analysis is a set of procedures that are applied to know indices to truthfulness of items (Singh, 1986). The indices used in the selection of items for the study were (a) discrimination index and (b) correlation of items with total score as suggested by Anastasi (1961) and Guilford (1971).

The 39 items selected by relevancy rating were given to 100 non sample respondents comprising undergraduate students, postgraduate students and unemployed graduates and responses were got on five point continuum.

The responses were quantified by allotting scores of 5,4,3,2, and 1 for positive items and for negative statements the scoring procedure was reversed.

For carrying out item analysis, two types of scores were used. They were item score referring to the score of an individual on a particular item and total score referring to the summation of items scores of an individual. These scores were used to arrive at discrimination index and item - total score correlation.

#### **3.4.5. Discrimination index**

It refers to the power of an item to discriminate the low entrepreneurial behaviour category from the high entrepreneurial behaviour category. The total score for each respondent was found by using the procedure elaborated else where. Following the suggestion of Edwards (1957) 25 per cent of subjects with highest total score and 25 per cent of subject with lowest total score were taken. The critical ratio ( t value) of each item was calculated

using the formula given by Edwards(1957).The formula used was

$$t = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\frac{\sum (X_H - \bar{X}_H)^2 + \sum (X_L - \bar{X}_L)^2}{n(n-1)}}$$

Where

- $\bar{X}_H$  = The mean score of an item for the high group.
- $\bar{X}_L$  = The mean score of an item for the low group.
- n = Numbers of subjects in a group.

Those statements with high 't' values were chosen -t value greater than or equal to 1.75 as suggested by Edwards (1957).

#### 3.4.6. Item - total score correlation

The correlation of each item score with total score yields a measure of internal consistency (Anastasi, 1961). Using Pearson's product moment method, correlation was worked out for each item score and total score of the individual.

### **3.4.7. Selection of items for final scale**

The results of item analysis of 39 items performed on the basis of discrimination index, and item total score correlation are presented in appendix. It could be seen from the Appendix VI that 33 items had significant items total score correlation. Similarly 34 items had value above 1.75. Considering these two factors 33 items which had high t value and significant item total score correlation were chosen.

### **3.4.8. Standardisation of the scale**

Standardisation of the scale was done by verifying the reliability and validity of the scale.

#### **3.4.8.1. Reliability of the scale**

The reliability of the test refers to the consistency of scores obtained by same individuals on different occasions or with different set of equivalent forms. Split-half reliability (Anastasi, 1961) was used in the present study using odd even method.

The scale was administered to 100 respondents from a non sample group and responses were collected. The

scores obtained for all the odd items were pooled. similarly scores obtained for all the even items were pooled. The two sets of scores thus obtained were correlated using Pearson's product moment correlation. The correlation coefficient ( $r=0.7525$ ) for 1/2 the test was obtained. The reliability of the full test was obtained using the formula.

$$\text{reliability of full test} = \frac{2 \times \text{reliability for } \frac{1}{2} \text{ test}}{1 + \text{reliability for } \frac{1}{2} \text{ test}}$$

Thus the reliability of the full test was 0.87 which indicates the high reliability of the scale.

### 3.4.8.2. Validity of the scale

A scale is valid when it actually measures what it claims to measure (Goode and Hatt 1952). The validity of the scale was found by using the following methods.

#### *3.4.8.2.1. Construct Validity*

The construct validity of a scale is the extent to which the scale may be said to measure the theoretical construct or trait. It is the degree to which, a measurement of a given concept, when employed in research is able to yield an entire set of relationship that makes a good theoretical sense to researcher.

In the present study, construct validity was tested by calculating the correlation coefficient between entrepreneurial behaviour score and self confidence score. The entrepreneurial behaviour and self confidence scores of 100 respondent comprising undergraduate students, postgraduate students and unemployed graduates were measured and a correlation of 0.702 was obtained which was significant. Hence it was concluded that the scale had construct validity as well.

#### *3.4.8.2.2. Content validity*

The main criterion for content validity is how well the contents of the scale represent the subject matter under study. Care was taken to include the items covering the universe of content with respect to entrepreneurial behaviour thus satisfying content validity.

#### **3.4.9. Administering the scale**

The final scale was administered to the 250 sample respondents. They were asked to respond on the five point continuum. The entrepreneurial behaviour score of the individual was worked out by summing the individual item score obtained by the respondent. The maximum score a person could obtain is 165 and minimum 33.



### ***3.5 Operationalisation, measurement and screening of independent variables***

#### **3.5.1. Selection of independent variables**

Based on the objectives, review of literature, discussion with experts and observations made by the researcher, a list of 28 variables were framed along with their operational definition and sent to 150 judges for eliciting their relevancy on a three point continuum ranging from 'most relevant' to least relevant' The judges were drawn from the field of Agriculture, i.e., teachers of K.A.U, teachers of other Agricultural universities and Agricultural Department officials. The scores for each item were summated over all the respondents and a relevancy index was worked out using the formula.

$$\text{Relevancy index} = \frac{\text{Scores obtained} \times 100}{\text{Maximum possible score}}$$

Those items which secured a relevancy index of 70 and above were finally selected (Appendix II). Thus 24 variables were finally selected as independent variables for the study under four major categories.

### 3.5.1.1. Personal Variables

1. Educational qualification.
2. Nativity.
3. Marks obtained in P.D.C
4. Marks obtained in B.Sc.
5. Overall Grade Point Average
6. Overall Grade Point Average in work experience
7. Father's occupation
8. Mother's occupation

### 3.5.1.2. Psychological variables

1. Self confidence
2. Persuasiveness
3. Self esteem
4. Thoughtfulness
5. Self reliance
6. Attitude towards self employment
7. Innovation proneness
8. Attitude towards competition

### 3.5.1.3. Sociological Variables

1. Sex
2. Sociability
3. Religion
4. Management orientation

### 3.5.1.4. Economic Variables

1. Economic Motivation
2. Annual income
3. Credit orientation

### 3.5.1.5. Technological variables

1. Technical competency

#### *3.5.1.1.1. Educational qualification*

This refers to the educational status of the respondent, i.e., whether the respondent was undergoing graduation, or postgraduation or was an unemployed graduate at the time of data collection. Quantification was done at nominal level of measurement. To identify the respondents on this variable a score of '1' was given for undergraduate student 2 for postgraduate student and '3' for unemployed graduate.

#### *3.5.1.1.2. Nativity*

This refers to whether the respondent hails from a rural community or urban community. This was measured by asking the respondent whether he hailed from a rural community or urban community. Quantification of the variables was done at nominal level. Hence to identify the respondents a score of '1' was given for rural background and a score of '0' for urban background.

#### *3.5.1.1.3 Marks obtained in Pre Degree*

This refers to the marks obtained by the respondent for the pre degree examination. Quantification of this variable was done in percentage.

#### *3.5.1.1.4 Marks obtained in B.Sc.*

This refers to the marks obtained by the respondent for the Degree programme. Quantification of this variable was done in percentage.

#### *3.5.1.1.5. Overall Grade Point Average*

This refers to the overall Grade Point Average obtained by the respondent at the time of data collection in the case of undergraduate and postgraduate students and in the case of unemployed graduates their O.G.P.A for the

degree programme. The O.G.P.A. obtained was as such recorded as the score.

#### *3.5.1.1.6. Overall Grade Point Average for work experience*

This refers to the Average of the Grade Points obtained by the respondent for all the work experience courses of the undergraduate course. The O.G.P.A obtained for work experience courses was as such recorded as the score.

#### *3.5.1.1.7. Father's occupation*

Father's occupation refers to the occupation of the father of the respondent. This was measured by categorising the occupation of father of the respondent into 'self employed', 'any other occupation' and 'unemployed' and assigning scores of 2,1, and 0 respectively.

#### *3.5.1.1.8. Mother's Occupation*

This refers to the occupation of the mother of the respondent. This was measured by categorising the occupation of the mother of the respondent into 'self employed', 'any other occupation' and 'unemployed' and assigning scores of 2,1, and 0 respectively.

### *3.5.1.2.1. Self confidence*

This refers to the belief of a respondent in his own abilities, initiative and zeal to achieve his goal or aim. This variable was measured by the scale developed by Basavanna (1974) with slight modification. The scale consisted of eight statements with 4 positive and 4 negative statements. The possible scores varied from 8 to 40. The responses were obtained on a five point continuum namely, strongly agree, agree, undecided, disagree and strongly disagree with weightage 5,4,3,2, and 1 respectively for positive statements and the scoring procedure was reversed for negative statements.

### *3.5.1.2.2. Persuasiveness*

It refers to the ability to influence by argument, by reason, inducement or to win over other persons to accept something to be true, credible, essential, commendable or worthy. This was measured by an arbitrary schedule developed for the study on the lines of principles of communication-persuasion process outlined by Mc Guire (1973). The schedule had six statements and the respondents were asked to give their response on a three point continuum of always, sometimes and never. A weightage of 3,2, and 1 was allotted in that order for positive statements and the scoring was reversed for negative statements. By summing up the scores allotted to all the statements, the

persuasiveness score of the respondent was found. The possible scores varies from 6 to 18.

#### *3.5.1.2.3. Self esteem*

It means the evaluation which the individual makes and customarily maintain with regard to himself, it expresses an attitude of approval or disapproval.

Self esteem was measured using a standardised instrument used by Thomas and Sanandaraj (1983) to measure self esteem of students . The inventory was constructed making use of self reporting method.

All the items in the inventory are in the form of self evaluative and or self descriptive statements. The items are expected to tap the self evaluation of the subjects from a wide variety of behavioural domains, including academic, social, physical, and emotional aspects and contain 25 items. The responses were obtained on five point continuum from strongly agree to strongly disagree, scores ranging from 5 to 1. The scoring procedure was reversed for negative statements. The possible score varied from 25 to 125.

#### *3.5.1.2.4. Thoughtfulness*

It refers to the extent to which the respondents have thinking introversion, reflectiveness being observant and meditative.

This variable was measured by using part of temperament survey devised by Mathew (1968) which is a modification of original Guilford Zimmerman Temperament survey.

This consisted of 20 items of which one was a negative statement. The maximum score a person could get was 20 and minimum 0.

#### *3.5.1.2.5. Selfreliance*

This refers to the extent to which a person relies on self for his future. Porchezian (1991) measured self reliance by asking the respondents “how much of your future depends on yourself” The response was measured based on the following scoring system.



Percentage	Score
100	5
75-99	4
50-74	3
25-49	2
less than 25	1
not at all	0

The same procedure was followed for the present study to measure self reliance.

#### *3.5.1.2.6. Attitude towards self employment*

This is defined as the mental disposition of the respondent towards self employment. In the present study attitude towards self employment was measured using the scale developed by Pradeep Kumar (1993). The scale consists of 10 statements. The respondents were asked to state their agreement or disagreement to each of the statements and a score of 1 and 0 were given respectively in the case of positive statements and for negative statements the scoring procedure was reversed. The scores obtained for each item were summed up to arrive at the individual's score on attitude towards self employment.

#### *3.5.1.2.7. Innovation proneness*

It is defined as the interest and desire of persons to seek changes in techniques and introduce such changes in their avocation. An arbitrary scale was developed to measure innovation proneness. This consisted of five statements of which three statements were negative. The response were obtained on a five point continuum ranging from strongly agree to strongly disagree with scores of 5,4,3,2,1 respectively. The scoring procedure was reversed for negative statements. The scores obtained for each item were summed up to arrive at the individual score on innovation proneness. The possible score ranged from 5 to 25.

#### *3.5.1.2.8. Attitude towards competition*

This refers to the mental disposition of individual towards competition in general.

Thomas (1984) used a Likert model attitude scale to measure attitude of subject towards competition i.e. persons having a favourable attitude towards competition will be wanting to win over others in studies, sports, industry etc. This forms part of generalised attitude scale developed by John (1982). The same scale was used to measure the attitude of students towards competition in this

study with necessary modification. The scale consisted of 13 statements with six negative statements. The responses were obtained on a five point continuum ranging from strongly agree to strongly disagree, with scores ranging from 5 to 1. The possible score a respondent could obtain ranged from 13 to 65.

### 3.5.1.3. Sociological variables

#### *3.5.1.3.1. Sex*

This is a dichotomised variable. Only two categories are there male and female. Quantification of this variable is possible only at nominal level of measurement. Hence to identify the respondents on this variable, a score of '1' was given for male and '2' for female.

#### *3.5.1.3.2. Sociability*

This variable was operationalised as the extent to which the individual makes friends, he likes social contacts and social activity. This variable was measured by using part of temperament survey devised by Mathew (1968) which is a modification of original Guilford-Zimmerman Temperament survey. The scale consisted of 20 statements of which 8 statements were negative. Responses were obtained on a two point continuum of agree and disagree. Score of 1 for 'agree' and '0' for 'dis-agree'. The possible score range was 0 to 20. The scoring procedure was reversed for negative statements.

#### *3.5.1.3.3. Religion*

This variable was operationalised as the religion to which the respondent belonged. This is a nominal variable the respondent was asked to state whether he was a Hindu, Muslim or Christian. To identify the respondents on this variable, a score of '1' was given for Hindu, '2' for Muslim and '3' for Christian.

#### *3.5.1.3.4. Management Orientation*

This refers to the degree to which respondent is oriented towards scientific management of an enterprise in agriculture, comprising planning, production and marketing of an enterprise.

Management orientation was measured using the scale developed by Samantha (1977) with slight modification in the statement. The scale consisted of fifteen statements, five statements each for planning, production and marketing orientation. In each group positive and negative statements were mixed retaining at the same time more or less psychological order of the statements. The respondents were asked to state their agreement or disagreement to each of the statements and scores of 1 and 0 were assigned respectively considering whether the statement is positive or negative. Scores for each respondent was obtained by

summation of scores for all the fifteen statements. The possible score range was 0-15.

### 3.5.1.4. Economic Variables

#### *3.5.1.4.1. Economic Motivation*

This was operationalised as the profit maximisation and the relative value placed by the respondent on economic end.

Suppe (1969) developed a scale to measure economic motivation of farmers which was used by Prochezian (1991) to measure economic motivation of farmer entrepreneur. The scale consisted of six statements and the responses were got on a five point continuum.

An arbitrary scale was developed in similar line for the present study with five statements on a five point continuum as follows. Two of the statements were negative all the rest being positive.

Response	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Scores for positive statement	5	4	3	2	1
Scores for negative statement	1	2	3	4	5

The reliability of the scale was tested using test re-test method. The responses were collected from 30 respondents at the first stage. The total score obtained for each individual was computed. The scale was again administered to the same set of respondents after two weeks. The total score obtained by each of the respondent was computed. The reliability obtained was 0.75.

#### *3.5.1.4.2. Annual income*

This refers to the total annual income of the family of the respondent. The method of scoring followed was as follows

Response	Score
1. Upto Rs.15,000	1
2. Rs.15,001 - Rs.25,000	2
3. Rs.25,001 - Rs.50,000	3
4. above Rs.50,000	4

Thus the possible score range was 1 to 4

#### *3.5.1.4.3. Credit Orientation*

This refers to the degree of orientation of the respondent to avail credit.

An arbitrary scale was developed by the researcher which consisted of 4 statements of which two statements were positive and two were negative. The responses were obtained on a five point continuum. For the first statement the response continuum was very essential, good, tolerable, must be avoided, and is a sin with scores ranging from 5 to 1. For the other three statements the continuum were strongly agree to strongly disagree with scores ranging from 5 to 1 for positive statements and 1 to 5 for negative statements in that order. The possible score range for the respondent varied from 1 to 20.

#### 3.5.1.5. Technical Competency

It refers to the extent to which the respondent possess knowledge in various aspects of scientific agriculture. It was measured by a standard knowledge test developed for the study and the procedure adopted is described in the ensuing pages.

##### *3.5.1.5.1. Item collection*

One hundred items on different activities with regard to scientific agriculture were collected from the package of practices recommendations (crops) of Kerala Agricultural University (1991) and in consultation with experts. From the pool of items, initial selection of items was done on the basis of the following criteria. a) It should promote thinking capability of the respondent. b) It should

differentiate the well informed respondent from the poorly informed. c) it should have some difficulty value. d) It should be relevant and more practical oriented than theoretical.

Based on these criteria from the pool of items, 61 items were initially selected for the knowledge test. The item content in the test was in terms of problems. The questions were framed to test the knowledge level on scientific farming which reflect the technical capability of the respondent ( Appendix VII).

#### *3.5.1.5.2. Item analysis*

Item analysis yields information like indices of item difficulty, item discrimination and item validity. The selected 61 items were administered to 100 respondents comprising undergraduate students, postgraduate students and unemployed graduates from non sample population. For correct answer a score of one was given and for incorrect answer 'Zero' was given.

After arriving at the total score secured by the individual respondent, they were arranged in descending order of their scores from highest to lowest. Following the recommendation of Garret (1966) and Guilford (1971) 27 percent of the respondents with highest scores and lowest scores were considered for calculating item difficulty and



items discrimination and these groups were referred as upper and lower groups.

#### 3.5.1.5.2.1. Difficulty index

The difficulty value of an item refers to the proportion or percentage of individuals who answer the item correctly (Garrett, 1966, Guilford, 1971). Various methods have been suggested to arrive at difficulty index of items. The formula used for this study is recommended by Singh (1986) which takes into account the extreme groups only thus saving labour and time.

The formula used was

$$P = \frac{RU + RL}{NU + NL}$$

Where P = Index of difficulty

RU = Number of individuals answering correctly in upper group.

RL = Number of individuals answering correctly in lower group.

NU = Number of individuals in upper group

NL = Number of individuals in lower group

### 3.5.1.5.2.2. Discrimination index

The index of discrimination is the ability of the items on the basis of which the discrimination is made between superiors and inferiors (Blood and Budd 1972). Among various methods of determining discrimination index, a simple and quick method called Net Index of Discrimination suggested by Marshall and Hales (1972) was followed. This is an unbiased index of absolute difference in numbers of discrimination made between upper and lower groups and it is proportionate to the net discrimination made by the items between the two groups. The formula used was,

$$V = \frac{RU - RL}{NU}$$

Where

- V = Net discrimination index
- RU = Number of individuals giving correct answers in upper group.
- RL = Number of individuals giving correct answer in lower group
- NU = Number of individuals in a group

### 3.5.1.5.3. Item validity

The validity power of the item is the correlation of the item score with the whole test score, referred as internal consistency, item discrimination index

(Lindquist, 1951). Since the items were scored simply as '0' and '1' point biserial correlation recommended by Garrett (1966) was worked out to indicate the items validity of each items. The formula used was

$$r_{pbis} = \sqrt{\frac{M_p - M_q}{\sigma}} \times \sqrt{pq}$$

Where  $r_{pbis}$  = point biserial correlation

$M_p$  = the mean of the total scores of the respondents who gave correct answer to the item.

$M_q$  = the mean of the total score of the respondents who gave incorrect answer to the item.

$\sigma$  = standard deviation of the entire sample.

$p$  = proportion of respondents giving correct answer to the item.

$q$  = proportion of respondents giving incorrect answer to the item.

The calculated values of difficulty index, discrimination index and point biserial correlations were the criteria considered for selection of items of the scale. Pillai(1983) considered difficulty index of 65 to 76 percentage and discrimination index above 0.35. Mothilal(1993) considered items with difficulty index of 0.4 to 0.6 and discrimination index above 0.4 with significant point biserial correlation for inclusion with final knowledge index. For this study items with difficulty index of 0.4 to 0.6 and discrimination index above 0.20 with significant point biserial correlation were selected as was done by

Ananapharaman (1977). This procedure yielded 20 test items for the final scale(Appendix VIII).

#### *3.5.1.5.5. Method of scoring*

Each respondent was given a score of '1' for correct answer and '0' for incorrect answer for each item. The total score of each respondent was calculated by adding the numbers of items answered correctly by the respondent.

#### *3.5.1.5.6. Reliability*

Reliability of the test was found by the split half method. In this method the selected 20 items were split into two equal halves of odd and even numbered items and administered to 30 respondents comprising of undergraduate postgraduates and unemployed graduate.

The Spearman-Brown prophecy formula was used to calculate reliability co-efficient which was found to be highly significant (0.83)

#### *3.5.1.5.7. Validity*

Care was taken to include the items covering the universe of content with respect to the technical subject matter of the respondents, thus satisfying the content validity. Since the items were selected based on

discrimination index and point biserial correlation, which are the measures of validity, the scale was considered to have content and construct validity.

### **3.6. Identification and ranking of factors**

#### **3.6.1. Identification of factors**

One of the objectives of the study was to identify and rank other extraneous factors which were not included as variables which influence entrepreneurial behaviour as perceived by the respondents. These were listed and sent for judges rating. They were asked to rate the degree of relevancy of each factor in influencing entrepreneurial behaviour on the three point continuum of 'most relevant' 'relevant' and 'least relevant' with corresponding score of 3,2, and 1 respectively. The score for each factor were summated over all the judges and a relevancy index was worked out.

$$\text{Relevancy Index} = \frac{\text{Score obtained} \times 100}{\text{Maximum possible score}}$$

Those factors which secured a relevancy index of ,80 and above were finally selected . Thus of the 13 factors sent for rating 11 factors were selected for inclusion in the final schedule (Appendix IV).

### **3.6.2. Ranking of factors**

The respondents were asked to rank these 11 factors from 1 to 11 by making an overall comparison with regard to the intensity of influence on entrepreneurial behaviour as perceived by them. A score of 10,9,8,7,6,5,4,3,2,1 and 0 were given to I, II, III, IV, V, VI, VII, VIII, IX, X, XI ranks respectively. The frequencies of the respondents ranking each factor in each rank were found out and multiplied with the corresponding score values to obtain the total score value. The factor with higher score value was considered as the most important one followed by others in the order of decreasing score values.

### **3.7. Collection of Data**

The data were collected taking into consideration the guidelines and recommendations suggested by Campbell *et al* (1979) to ensure maximum accuracy. A questionnaire was prepared and was pre-tested with 40 agricultural students from a non sample population in order to avoid ambiguity if any in the items included in the questionnaire.

Based on the responses, slight modifications were made wherever found necessary. Afterwards the final questionnaire (Appendix IX) was printed. Great care and

attention had been taken in finalising the wording and format of the questionnaire to eliminate mistakes and to avoid confusion regarding various items.

The researcher contacted the students of the two campuses and distributed the questionnaires to all the final year students and postgraduate students. With respect to the unemployed graduates, addresses were collected from the two colleges of those students who have passed out and were not employed and questionnaires were sent to these addresses. The respondents were asked to go through each item and give their honest, sincere and non biased responses to each and every question in the questionnaire. They were also requested to mail back the filled in questionnaire to the researcher in the self addressed stamped envelope already provided to the respondent except in the case of college of Agriculture Vellayani, where the completed schedules were directly collected. Altogether 250 questionnaires complete in all respect were considered for the study.

### ***3.8. Categorisation of respondents***

For most of the variables except a few the respondents were classified into low group and high groups taking mean as the criteria.

- High - equal to and above mean.
- low - below mean.

The variables, entrepreneurial behaviour, marks obtained in P.D.C., marks obtained in B.Sc., overall grade point, O.G.P.A in work experience, self confidence, persuasiveness, attitude towards self employment, innovation proneness, attitude towards competition, sociability, management orientation, economic motivation, credit orientation and technical competency were classified in the above way. In the case of nativity, father's occupation, mother's occupation, sex, caste, Annual income, and self reliance the respondents were classified as follows.

Nativity:

(i) Rural background	-	1
(ii) Urban background	-	2

Fathers occupation and mothers occupation:

(i) self employed	-	2
(ii) any other employed	-	1
(iii) not employed	-	0

Sex :

(i) Male	-	1
(ii) Female	-	2



## Religion:

(i) Hindu	-	1
(ii) Muslim	-	2
(iii) Christian	-	3

## Annual income:

(i) up to Rs.15,000	-	1
(ii) Rs.15,001 to 25,000	-	2
(iii) Rs.25,001 to 50,000	-	3
(iv) above 50,001	-	4

## Self reliance:

	Percentage	Category
(I)	100	5
(ii)	75-99	4
(iii)	50-74	3
(iv)	24-49	2
(v)	less than 25	1
(vi)	not at all	0

### **3.9. Statistical methods and tools**

The data collected from the respondents were scored, compiled and analysed using the following statistical methods. Assuming that the data were at least at ordinal level of measurement except for some of the variables like

sex, caste, nativity, father's occupation and mother's occupation and distributed with considerable degree of homogeneity of variance, more of parametric tests were preferred as per the suggestions of Bonear (1960) and Mc Nemar (1962), Analysis of data were done at college of Agriculture, Vellayani and Kerala University campuses, Kariavattom.

### **3.9.1. Simple percentages**

After working out the means of the dependent and independent variables, respondents were categorised into different groups taking this parameter as the main criteria except in the case of sex, caste, nativity, father's occupation, mother's occupation, annual income and self reliance, percentage distribution of respondents in different categories on all variables were worked out by dividing the frequency in each category with total number of respondents and multiplying by 100.

### **3.9.2. Co-efficient of variation**

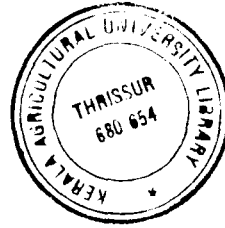
Co-efficient of variation was used to identify the magnitude of variation present in each set of observations relative to the value of arithmetic means. It is the ratio of standard deviations to arithmetic mean expressed in percentage. Lesser the coefficient of variation for a variable the more homogenous the sample will be with respect to that variable.

### **3.9.3. Pearson's product moment correlation**

This was used to specify both nature and degree of relationship between each of the independent variables ( $X_i$ ) and the dependent variable ( $Y$ ). Inter-relationship between the independent variable under study were also computed. The computed values of 'r' were tested for their significance using table values at  $n-2$  degrees of freedom.

### **3.9.4. Step wise - regression analysis**

Step wise regression analysis is applied to select the best regression equation. The analysis helps to re-examine at every stage of the regression of the independent variables to be incorporated into the regression model in previous stages. The partial F Criterion for each variable in the regression at any stage of calculation helps to know whether any variable which was found best at earlier stage but become superfluous at later stage because of its relationship with other variables now in the regression. A judgment on the contribution made by each variable which provides an insignificant contribution is removed from the model. The process is continued until no more variable are entered in the model and no more are rejected (Draper and Smith, 1966).



### 3.9.5. Path coefficient analysis

Path analysis originally developed by Wright(1921) and followed by Li (1955), Land (1969) and Singh and Chaudhary (1979) was put to use to know the nature of influence of the independent variable in terms of direct and indirect effects exerted on the dependent variable unexplored by either correlation or regression analysis.

### 3.9.6. Chi - square test

This was done to find out whether there is any association with the enumerative type of variables selected and the entrepreneurial behaviour of the different groups of respondents.

### 3.9.7. Factor analysis

Factor analysis is a branch of multivariate analysis and is a method of analysing the dependence structure of a set of variables.

Factor analysis is a statistical technique which enables to replace a large number of variables/factors which may have very little theoretical meaning with a much smaller number of conceptual variables which make very good sense theoretically (Blalock, 1960).

According to Overall and Klett (1972) factor analysis is a powerful statistical method which aims at explaining the relationship among numerous connected variables in terms of a relatively few underlying variables called factors. This is useful in analysing the dependent structure of a multivariate population when no a prior pattern of causality is available. The parsimony of description of a complex structure.

Factor analysis is based upon setting up a statistical model of the data. Each variable is modeled on a linear combination of a small number of 'factors' with the addition of a random error component. So it has the factor for the variable  $X_i$

$$X_i = K_{i1} F_1 + K_{i2} F_2 + \dots + K_{im} F_m + U_i$$

Where  $m$  denotes the number of factors in the model,  $F_1, F_2, \dots, F_m$  are the hypothetical variables and  $u$  are random error computed.

The most important aspect of factor analysis is the extraction of factor loading's. Several methods can be adopted for the extraction of factor loading's. Among them, the maximum likelihood method was used in this study.

Lawley (1940) applied the method of Maximum Likelihood to estimate the loading's in a factor model and now it remains the best method of extraction of factor analysis. The estimates obtained by Maximum likelihood Factor Analysis enjoys a powerful invariance property "changes in the scales of the response variate only appear as scale changes of the loading's. In addition the Maximum likelihood method provides test of significance for the determination of the number of common factors.

Maximum likelihood solution requires an estimate of the number of common factors. The ML estimation is a consistent estimation as well as frequently a minimum variance estimator. A well known property of ML method of factor analysis is that it is independent of the units of measurement in characters.

The covariance matrix, correlation matrix (units in diagonal), matrix of common factor coefficients and diagonal matrix of uniqueness are found.

The computation procedure involves the following steps.

1. Organisation of data - The complete correlation matrix (with unities in diagonal) constitute the basic data.

2. Hypothesis regarding number of factors ( $m$ ). An assumption regarding the number of common factors made on the basis of available information. Test of hypothesis is done to see the statistical significance and finale number of common factors are fixed.
3. Initial set of trial values the iterative procedure which ultimately leads to the maximum likelihood estimates is begun with some arbitrary first approximation to factor loading's. The uniqueness are computed from these values.
4. Factor weights divided by uniqueness - To get this the original vector is multiplied by the inverse of diagonal matrix of uniqueness.
5. Convergence of factor weights. The iteration equations are applied again and again until convergence of factor weights is obtained to the desired degree of accuracy.

If an item has no significant correlation with a component then that item is not contributing significantly to the variance of the component. If the item is not correlated with any of the other components, then it can be eliminated as contributing nothing towards total variability. Fruchter(1954) suggested a limit of 0.5 and items having factor loading from 0.5 to 0.7 were considered as high and above 0.7 as very high. Walton (1972) found a minimum

correlation co-efficient (factor loading's) of 0.45 among traits affected by a common factor. Asawa(1981) in his studies on factor analysis in chick pea restricted to select only those characters which gave a factor loading greater than or equal to 0.5 to provide for meaningful representation of the relationship among original variable. Kunju (1989) in his study on transfer of agricultural technology structural and functional analysis had taken 0.45 as the minimum limit.

Khatker *et al*(1987) had drawn inference on factor on the basis of factor loading more than 0.40. Harris(1975) Maxwell (1977) and Young man (1979) and Chatfield and Collins (1980) suggested a factor loading of 0.50, 0.25 and 0.50, and 0.25 respectively in absolute terms.

In the present study since the factor loading's obtained were low in some of the items, those items having a factor loading greater than or equal to 0.21 were selected. However under each factor among those items having factor loading's above 0.21 those with relatively higher factor loading's were chosen.



# RESULTS AND DISCUSSION

## 4. Results and Discussion

In this section the results of the study are presented, interpreted and discussed under the following headings.

4.1. Entrepreneurial behaviour scale developed for the study - results of factor analysis.

4.2. Entrepreneurial behaviour of agricultural students

4.2.1. Profile characters of agricultural students

4.2.2. Mean score, standard deviation and co-efficient of variation of entrepreneurial behaviour and selected personal, social, psychological, economic and technological characters of agricultural students.

4.2.3. Relationship of selected personal, social, psychological, economic and technological characters with entrepreneurial behaviour of agricultural students.

4.2.4. Predictive power and relative contribution of selected personal, social, psychological, economic and technological characters in explaining the various entrepreneurial behaviour of agricultural students.

- 4.2.5. Direct and indirect effects of selected personal social, psychological, economic and technological characters on entrepreneurial behaviour of agricultural students.
- 4.3. Identification of factors influencing entrepreneurial behaviour of agricultural students as perceived by them.
- 4.4. Strategy to inculcate suitable traits in agricultural students to develop entrepreneurial behaviour in them and to develop conducive conditions for under taking self employment by the agricultural students.

#### ***4.1 Entrepreneurial behaviour scale developed for the study- results of factor analysis***

The maximum likelihood solutions for the entrepreneurial behaviour of agricultural students are presented in Table 4.1. The results clearly indicate that about forty three per cent of the total variability in the extent of entrepreneurial behaviour was accounted by twelve factors.

The content and nature of individual factors are described below.

### Factor 1

The proportionate contribution of factor 1 to the total variability was 4.3 per cent. As many as four items under factor 1 were found to have relatively high positive loading above 0.21. Out of these I<sub>10</sub> you usually remain cheerful in spite of trouble was found to have a loading of 0.72306 which according to Fruchter (1954) is very high. This was followed by I<sub>14</sub> - you remain in uniform spirit most of the time (0.36183) and I<sub>11</sub> - You generally keep cool and think clearly in exciting situation (0.31089). The first two has only moderate loading. I<sub>1</sub> - the decision to avail loan for starting an enterprise will be done in consultation with the family members (-217.48) was of low loading and also was of negative inter relation. So it was not taken into consideration. I<sub>20</sub> it is foolish to take initiative and bear the risk when there are others to take lead was also found to have a high loading (-.71096), but was not included under factor 1, since the interrelationship was negative.

The correlation between any two activities under factor 1 was positive and significant indicating their interrelationship. These activities came under the

characteristics of emotional stability as given by *Mathew* (1968) and therefore with reasonable conviction the Factor I could be labeled as emotional stability.

### **Factor II**

This factor contributed 5.5 per cent to the total variability. Eight items viz.  $I_6(0.22257)$ ,  $I_{10}(0.69005)$ ,  $I_{11}(0.36863)$ ,  $I_{18}(0.23956)$ ,  $I_{20}(0.70252)$ ,  $I_{25}(0.29583)$ ,  $I_{26}(0.27434)$  and  $I_{31}(0.20288)$  were found to have significant factor loadings (above 0.21). However from among the eight items, three items which were having comparatively higher factor loadings were chosen. They were  $I_{10}$  - you usually remain cheerful in spite of trouble (0.69005),  $I_{11}$  - you generally keep cool and think clearly in exciting situation (0.36863) and  $I_{20}$  - it is foolish to take initiative and bear the risk when there are others to take lead (0.70252).

All these items reflect boldness of the respondent. Therefore Factor II could reasonably be termed as "boldness".

### **Factor III**

The proportionate contribution of this factor to the total variability was 10.8 per cent being the highest contributor. Sixteen items were found to have significant

factor loading (above 0.21). They were I<sub>2</sub>(0.35056), I<sub>3</sub>(0.45712), I<sub>5</sub>(0.36892), I<sub>6</sub>(0.32818), I<sub>8</sub>(0.42443), I<sub>16</sub>(0.44910), I<sub>17</sub>(0.59578), I<sub>18</sub>(0.42468), I<sub>21</sub>(0.41153), I<sub>23</sub>(0.40727), I<sub>24</sub>(0.56619), I<sub>25</sub>(0.48426), I<sub>26</sub>(0.61172), I<sub>27</sub>(0.52058), I<sub>28</sub>(0.33054). Of these fourteen items were selected which were having factor loading relatively higher to group them meaningfully. These items were I<sub>2</sub>- if at all you decide to start a new venture, it will be a decision made by you on your own, I<sub>3</sub> - you are confident to take the decision to avail loan for starting an enterprise, I<sub>5</sub>- when faced with alternatives you take the initiative to decide the course of action, I<sub>8</sub>- if you go for a Government job you will get a salary of Rs.4000/month, if you start a enterprise, you may be able to get double the amount but there are chances of loss also, you will prefer to start an enterprise, I<sub>16</sub> - you never sit back waiting for others to bring information, I<sub>17</sub> whenever you want to know more about something, you take the initiative to seek the information, I<sub>18</sub> - you prefer to do things on your own drive, I<sub>21</sub> - when you are with a group which is assigned to do a specific task, you take the initiative to get things done, I<sub>23</sub> you would have the determination and driving ambition to achieve certain things in life even if these qualities make you unpopular, I<sub>24</sub> - you would set difficult goals for yourself and try to reach them .I<sub>25</sub>- you would try to excel in the work you set to do. I<sub>26</sub> -even if

**Table 4.1 Maximum Likelihood Solutions for the entrepreneurial behaviour**

Sl. No	Name of factor	Items	Description of Item	Factor loadings	Proportionate variance accounted by each factor
1	Emotional Stability	I <sub>10</sub>	You usually remain cheerful inspite of trouble	0.72306	4.3
		I <sub>11</sub>	You generally keep cool and think clearly in exciting situation	0.31089	
		I <sub>14</sub>	You remain in uniform spirit most of the time	0.36183	
2	Boldness	I <sub>10</sub>	You usually remain cheerful inspite of trouble	0.69005	5.5
		I <sub>11</sub>	You generally keep cool and think clearly in exciting situation	0.36863	
		I <sub>20</sub>	It is foolish to take initiative and bear the risk when there are others to take lead	0.70252	
3	Achievement related 1. Decision Making	I <sub>2</sub>	If at all you decide to start a new venture, it will be a decision made by you or your own	0.35056	10.8
		I <sub>3</sub>	You are confident to take the decision to avail loan for starting an enterprise	0.45712	
		I <sub>5</sub>	When faced with alternatives you take the initiative to decide the course of action	0.36892	
		I <sub>8</sub>	If you go for government job, you will get a salary of Rs. 4000/month, if you start an enterprise you may be able to get double the amount, but there are chances of loss also, you will prefer to start an enterprise	0.42443	
	2. Initiative	I <sub>16</sub>	You never sit back waiting for others to bring information.	0.49910	

Sl. No	Name of factor	Items	Description of Item	Factor loadings	Proportionate variance accounted by each factor
	3. Goal directed behaviour	I <sub>17</sub>	Whenever you want to know more about something you take the initiative to seek information	0.59578	
		I <sub>18</sub>	You prefer to do things on your own drive	0.42462	
		I <sub>21</sub>	When you are with a group which is assigned to do specific task, you take the initiative to get things done	0.41155	
		I <sub>23</sub>	You would set difficult goals for yourself and try to reach them	0.40727	
		I <sub>24</sub>	You would have the determination and driving ambition to achieve certain things in life even if these qualities make you unpopular	0.56619	
		I <sub>25</sub>	You would try to excel in the work you set to do	0.48426	
		I <sub>26</sub>	Even if there are chances of failure you would take the risk and try to achieve the goal	0.61172	
		I <sub>27</sub>	Your efforts are always directed towards specific goals	0.52058	
		I <sub>28</sub>	You would expect your general contentment in life in the next three years to be certainly better	0.33054	



Sl. No	Name of factor	Items	Description of Item	Factor loadings	Proportionate variance accounted by each factor
4	Aspiration	I <sub>4</sub>	You feel confident only when decisions are made in consultation with others	0.40844	4.8
		I <sub>9</sub>	Suppose a new private firm offers you a job as a manger, the survival of which depends on the effort you put in. In addition to fixed salary they offer you commission in proportion to the sale of their produce, at the same time you are offered a government job which is permanent, you will prefer the government job	0.35509	
		I <sub>29</sub>	Suppose you are getting a lottery worth Rs. 1 lakh you would start an agri enterprise	0.35013	
		I <sub>30</sub>	The most likely thing to happen in the next 5 years time is your securing a government job rather than establishing an agri enterprise	0.39028	
		I <sub>31</sub>	You would be prepared to take loan for starting an enterprise than purchasing a house	0.35117	
		I <sub>32</sub>	If you have a saving of Rs. 50,000/- you would rather continue the deposit than invest it in business	0.35152	
5	Emotional Security	I <sub>12</sub>	You feel lonesome even when with other people	0.40090	3.3
		I <sub>13</sub>	Your mood is very easily influenced by people around you	0.57796	
		I <sub>15</sub>	You sometimes feel listless and tired for no good reason	0.24665	

Sl. No	Name of factor	Items	Description of Item	Factor loadings	Proportionate variance accounted by each factor
6	Commitment	I <sub>22</sub>	You would succeed in your occupation even if you are neglectful of your family	0.31812	2.8
		I <sub>23</sub>	You would have determination and driving ambition to achieve certain things in life even if these qualities make you unpopular	0.48922	
7	Economic risk taking	I <sub>3</sub>	You are confident to take the decision to avail the loan for starting an enterprise	0.40583	2.4
		I <sub>6</sub>	Government is supplying loan to the educated unemployed youth for self employment. The amount has to be repaid within a period of three years even if your enterprise runs at a loss, you will be ready to take the risk	0.30369	
8	Aptitude for business	I <sub>27</sub>	Your efforts are always directed towards specific goals	-0.22197	2.2
		I <sub>29</sub>	Suppose you are getting a lottery worth Rs. 1 lakh you would start an agri enterprise	-0.30653	
		I <sub>31</sub>	You would be prepared to take loan for starting an enterprise than purchasing a house	-0.20889	
9	Achievement related risk taking	I <sub>6</sub>	Government is supplying loan to the educated unemployed youth for self employment. The amount has to be repaid within a period of three years even if your enterprise runs at a loss, you will be ready to take the risk	0.27567	

Sl. No	Name of factor	Items	Description of Item	Factor loadings	Proportionate variance accounted by each factor
		I <sub>7</sub>	If the silk board is providing inputs for promoting sericulture but is not assuring market for the produce, you will be prepared to take up the enterprise	0.27828	2.1
		I <sub>23</sub>	You would have determination and driving ambition to achieve certain things in life even if these qualities make you unpopular	0.24497	
10	Economic aspiration	I <sub>17</sub>	Whenever you want to know more about something you take the initiative to seek information	-0.22881	1.9
		I <sub>29</sub>	Suppose you are getting a lottery worth Rs. 1 lakh you would start an agri enterprise	-0.27121	
		I <sub>32</sub>	If you have a saving of Rs. 50,000/- you would rather continue the deposit than invest it in business	-0.26587	
11	Dependency	I <sub>1</sub>	The decision to avail loan for starting an enterprise will be done in consultation with others	0.22561	1.7
		I <sub>4</sub>	You feel confident only when decisions are made in consultation with others	0.25865	
		I <sub>19</sub>	You feel confident to do things when others prompt you	0.21360	
		I <sub>22</sub>	You would succeed in your occupation even if you are neglectful of your family	0.33059	
12	Self competency	I <sub>19</sub>	You feel confident to do things when others prompt you	0.29452	1.4
				Total	43.1

there are chances of failure you would take the risk and try to achieve the goal, and I<sub>27</sub>- your efforts are always directed towards specific goals. I<sub>28</sub> you would expect your general contentment in life in the next three years to be certainly better.

On examining these items they are mainly achievement related in origin and can be defined by three measures, viz decision making ability, initiative and goal directed behaviour. Under decision making first four items viz. I<sub>2</sub>, I<sub>3</sub>, I<sub>5</sub> and I<sub>8</sub> were included. Next four items I<sub>16</sub>, I<sub>17</sub>, I<sub>18</sub> and I<sub>21</sub> were included under initiative and last six items viz. I<sub>23</sub>, I<sub>24</sub>, I<sub>25</sub>, I<sub>26</sub>, I<sub>27</sub> and I<sub>28</sub> were included under goal directed behaviour.

#### **Factor IV**

The selected items were I<sub>4</sub>(0.40844)-you feel confident only when decisions are made in consultation with others, I<sub>9</sub>(0.35509) - suppose a new private firm offers you a job as a manager the survival of which depends on the effort you put in. In addition to fixed salary they offer you commission in proportion to the sale of their produce. At the same time, you are offered a Government job, which is permanent, you will prefer the Government job. I<sub>29</sub>(0.35013)- suppose you are getting a lottery worth Rs.1

lakh you would start an agri-enterprise, I<sub>30</sub>(0.39028)- the most likely thing to happen in the next 5 years time is your securing a Government job rather than establishing an agri-enterprise, I<sub>31</sub>(0.35117)- you would be prepared to take loan for starting an enterprise rather than purchasing a house, I<sub>32</sub>(0.35152) - if you have a saving of Rs.50,000/- you would rather continue the deposit than invest it in business.

The name coined for this factor is 'aspiration' as they reflect the aspiration level of the respondent.

### **Factor V**

The proportionate contribution of factor V to the total variability was 3.3 percent. The results of factor analysis indicate five items to have factor loading above 0.21. The items were I<sub>12</sub>(.40090), I<sub>13</sub>(0.57796), I<sub>15</sub>(0.24665), I<sub>21</sub>(0.24299) and I<sub>33</sub>(0.23123). However only those items having relatively higher factor loading were considered for meaningful interpretation. Thus I<sub>12</sub> - you feel lonesome even when with other people and I<sub>13</sub>- your mood is very easily influenced by people around you, I<sub>15</sub> - you sometimes feel listless and tired for no good reason were selected. Considering the nature of these items, the factor can be aptly named as emotional security.

### **Factor VI**

The contribution of Factor VI to total variability was only 2.80 percent. Under factor VI five items were having factor loading above 0.21 and these were I<sub>7</sub>(-.23889), I<sub>8</sub>(-.26758), I<sub>16</sub>(-0.22039), I<sub>22</sub>(.31812) and I<sub>23</sub>(.48922). Of these only two items were having positive correlation and also comparatively higher factor loading. These items are I<sub>22</sub>- you would succeed in your occupation even if you are neglectful of your family, I<sub>23</sub> - you would have determination and driving ambition to achieve certain things in life even if these qualities make you unpopular. On analysis of these two items under this factor, it is obvious that they reflect a sense of commitment and so could be termed as 'commitment'.

### **Factor VII**

The proportionate contribution of Factor VII to the total variability was only 2.4 per cent. As many as seven items were found to have factor loadings above 0.21. These were I<sub>3</sub>(.40583), I<sub>6</sub>(.30369), I<sub>7</sub>(.23676), I<sub>11</sub>(.22611), I<sub>14</sub>(.23450), I<sub>17</sub>(-.2692) and I<sub>32</sub>(-.20919). Since I<sub>17</sub> and I<sub>32</sub> were negatively correlated and were of relatively lower factor loading these were excluded from inclusion in Factor VII. Only those items with factor loading above 0.3 were included under this factor. The chosen two items were I<sub>3</sub>- you are confident to take the decision to avail the loan for

starting an enterprise, and I<sub>6</sub>- Government is supplying loan to the educated unemployed youth for self employment. The amount has to be repaid within a period of three years even if your enterprise runs at a loss, you will be ready to take the risk. Since these two items gives an indication of readiness to take economic risk, the factor can justifiably be named as economic risk taking.

### **Factor VIII**

This factor contributed only 2.2 per cent to total variability. Four items were found to have factor loadings above 0.21. These were I<sub>16</sub>(.38120), I<sub>27</sub>(-.22194), I<sub>29</sub>(-.30653), I<sub>31</sub>(-0.20889). Considering the correlation, last three items mentioned above were negatively correlated and only one item under positive correlation. Though the factor loading of I<sub>16</sub> was comparatively higher it was not included considering the sign. The negatively correlated items were I<sub>27</sub> - your efforts are always directed towards specific goals, I<sub>29</sub> - suppose you are getting a lottery worth Rs.1 lakh you would start an enterprise, I<sub>31</sub> you would be prepared to take loan for starting an enterprise rather than for purchasing a house. On examining the nature of these items the factor could reasonably be termed as aptitude for business.

### **Factor IX**

The contribution of factor IX to total variability was 2.1 per cent. Here six items viz.  $I_2(-.24891)$ ,  $I_3(-.24983)$ ,  $I_6(.27567)$ ,  $I_7(.27828)$ ,  $I_{23}(.24497)$ ,  $I_{28}(.22505)$ . Of these two items were found to be negatively correlated where as four items were positively correlated. So the positive items alone were taken into consideration. Here again item  $I_{28}$  which was having relatively lower value was deleted. The selected items were  $I_6$  - Government is supplying loan to the educated unemployed youth for self employment. The amount has to be repaid within a period of three years even if your enterprise runs at a loss, you will be ready to take the risk,  $I_7$  - If the silk board is providing inputs for promoting sericulture, but is not assuring the market for the produce, you will be prepared to take up the enterprise,  $I_{23}$  - you would have the determination and driving ambition to achieve certain things in life even if these qualities make your unpopular. Considering these items, the first two reflect risk taking and the last item indicate achievement motivation and so this factor was named as 'achievement related - risk taking'.

### **Factor X**

The contribution of factor X to total variability was only 1.9 per cent. Seven items were observed to have



factor loading above 0.21 of which only two were positive  $I_9(.34145)$  and  $I_{15}(.24359)$ . Since majority of the items were negative these were considered for inclusion under factor X  $I_6(-.21836)$ ,  $I_{17}(-0.22881)$ ,  $I_{18}(-.20828)$ ,  $I_{29}(-.27121)$  and  $I_{32}(-.26587)$ .

From among these 3 items which were having comparatively higher factor loadings (above 0.23) namely  $I_{17}$ - when you want to know more about something you take the initiative to seek the information.  $I_{29}$  - suppose you are getting a lottery worth Rs.1 lakh, you would start an agricultural enterprise,  $I_{32}$  - If you have a saving of Rs.50000/- you would rather continue the deposit than invest it in business. On examining these items it could be inferred that they reflect economic aspiration and so was suitably named as economic aspiration.

### ***Factor XI***

The contribution of this factor to total variability is negligible only 1.7 per cent. Four items were having positive factor loadings above 0.21. These were  $I_1(0.22561)$ - the decision to avail loan for starting an enterprise will be done in consultation with the family members,  $I_4(0.25865)$ - you feel confident only when decisions are made in consultation others,  $I_{19}(0.21360)$ - you feel

confident to do things when others prompt you,  $I_{22}(0.33059)$  you would succeed in your occupation even if you are neglectful of your family. All these items tell upon the dependency of the respondent to take decisions and achieve things and so is named as 'dependency'.

### ***Factor XII***

The proportionate contribution of factor XII to the total variability is still negligible (1.4%). In this case one positive correlation  $I_{19}(0.29452)$  and three negative correlations  $I_{21}(-0.23475)$ ,  $I_{22}(-0.20730)$ , and  $I_{31}(-0.21361)$  were having factor loading's above 0.21.

Due to the relatively high value obtained only  $I_{19}$  was considered (you feel confident to do things when other prompt you) and this was named as self competency.

On examining the twelve factors and the various items included under the factors it was observed that  $I_{33}$  was not included under any of the factors. It's communality was also only 0.16122. According to Fruchter (1954) as quoted by Kunju (19...) if an item (variable) is not correlated with any of the other components, then it can be eliminated as contributing nothing towards total variability.

#### 4.2.1 Profile characters of agricultural students

The profile character of the respondents under study is presented in Table 4.2 and Table 4.3.

##### 4.2.1.1 Nativity

It could be seen from the Table 4.2 that 64 per cent of the respondents hail from the rural background in the case of undergraduate students where as only 45 and 38 per cent belonged to the rural background in the case of postgraduate students and unemployed graduates.

As to the male students 54 per cent belonged to the rural background whereas only 46.6 per cent of the female group belonged to rural background.

The result probably implies that students hailing from rural areas have more liking for agricultural course. Since they belong to the rural areas, they have an agricultural background which might have prompted them to pursue this course. The results also indicated that the female students and postgraduates from the rural areas opting for agricultural course is less. In the case of postgraduates the distribution is lesser in rural background probably because those hailing from rural areas opt for field work rather than pursue research. In the case of females, the probable reason might

be that the parents in rural areas are reluctant to send their daughters for this course due to the type of work involved.

#### 4.2.1.2 Father's occupation

As evidenced from Table 4.2 the percentage of respondents with unemployed fathers was highest in the postgraduate category (6%) and least in the case of undergraduate category (1%). More than 70 per cent of the respondent's father's occupation was something other than self employment in the case of undergraduates students, postgraduate students and unemployed graduates. An interesting observation was that in the case of unemployed 24 per cent of the respondent's father's were self employed. Table 4.3 implied that more than 7.5 per cent of the respondents parents occupation was something other than self employment both in the case of male and female students. Only below 20 per cent of the respondent's fathers were self employed.

#### 4.2.1.3 Mother's Occupation

A critical view of the Table 4.2 indicates that sixty percentage of the respondent's mothers were unemployed in the case of postgraduates, where as only 46 per cent and 48 per cent belonged to this category in the case

of undergraduate students and unemployed graduates. In the case of unemployed graduates none had self employed mother. Only negligible percentage of respondents mothers were self employed in the case of undergraduate students and postgraduate students.

Similarly only very negligible percentage of respondents mothers were self employed in the case of male and female students as evidenced from Table 4.3. More than 50 per cent of the respondents had mothers who were unemployed

#### 4.2.1.4 Marks obtained in Pre-Degree

Table 4.2 evidenced that above 60 per cent of the respondents belonged to the high category in the case of postgraduate students and unemployed graduates where as only 36 per cent of the respondents belonged to the high category in the case of undergraduate students.

Table 4.3 implies that more than 60 per cent of the respondents belonged to high category in the case of female students whereas only 35 per cent belonged to high category with respect to male students.

The students joining for this course are being selected after rigorous screenings through entrance examination. So it is natural that majority of respondents belong to the high group implying academic brilliance of the respondents.

#### 4.2.1.5 Marks obtained in B.Sc.

As evidenced from Table 4.3 in the case of postgraduate students and unemployed graduates more than 65 per cent of the respondents belonged to high category whereas in the case of undergraduates above 50 per cent belonged to the high group. With respect to the male and female students more than 70 per cent belonged to high category whereas only 47 per cent belonged to high category in the case of female students.

In the case of postgraduates the results obtained are logical since the marks obtained for B.Sc. programme forms one of the criteria for selection for postgraduate programme. In the case of undergraduate and male group also more than 50 per cent belonged to high group implying that academic achievement of majority of the students were above average.

#### 4.2.1.6 Overall grade point Average

More than, 70 per cent of the respondents belonged to the high group in the case of unemployed graduates and postgraduate students (Table 4.2) only 37 per cent belonged to high category in the case of undergraduate students. In the case of male group more than 50 per cent of the respondents belonged to the low group where as more than 65 per cent belonged to the high group in the case of female group.

The result implies that academic achievement of the postgraduates, unemployed graduates and the female group are high. The results obtained are logical in the case of postgraduate students because students joining for post graduation have higher academic achievement. Similarly if we examine the ranks obtained by students for S.S.L.C and pre-degree courses, females are securing higher ranks which indicate that they have more academic achievement compared to their counterpart. In the case of unemployed graduates they have successfully completed their courses, whereas in the case of undergraduate students the sample include those who are still undergoing the course, so may include those who have not completed the academic requisites successfully. This might be the probable reason for lower percentage of respondents in high category in the case of undergraduate students.

#### 4.2.1.7 Overall Grade Point Average in work experience

The results presented in Table 4.2 revealed that more than 50 per cent of the respondents belonged to the high category in all groups except in the case of unemployed graduates where only 48 per cent of the respondents belonged to the high group. With respect to male and female group also more than 50 per cent belonged to high category. The results imply that majority of the respondents have good grade in work experience.

#### 4.2.1.8 Self confidence

A critical view of the Table 4.2 indicated that more than 60 per cent of the respondents belong to the high group in the case of undergraduates and unemployed graduates. In the case of postgraduates only 49 per cent belonged to the high category. In the case of female group 54 per cent belonged to the high category whereas more than 60 per cent belonged to the high category in the case of male (Table 4.3).

Self confidence is a highly essential characteristic to take up any self employment oriented venture on the part of the respondent.



**Table 4.2. Profile characters of Undergraduate students, Postgraduate students and Unemployed graduates**

Sl. No.	Variable	Category	Mean	Undergraduate students N=100		Postgraduate students N=100		Unemployed graduates N=50	
				Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
				1.	Nativity	Rural	64	64	45
		Urban	36	36	55	55	31	62	
2.	Father's Occupation	0	1	1	6	6	2	4	
		1	81	81	81	81	36	72	
		2	18	18	13	13	12	24	
3.	Mother's Occupation	0	46	46	60	60	24	48	
		1	53	53	38	38	26	52	
		2	1	1	2	2	0	0	
4.	Marks obtained in pre degree	High $\geq$ Mean	75.41	36	36	64	64	31	62
		Low $<$ Mean		64	64	36	36	19	38
5.	Marks obtained in B.Sc.	High $\geq$ Mean	83.91	54	54	67	67	38	76
		Low $<$ Mean		46	46	33	33	12	24
6.	Overall Grade Point Average	High $\geq$ Mean	8.67	37	37	76	76	36	72
		Low $<$ Mean		63	63	24	24	14	28
7.	Overall Grade Point Average in work experience	High $\geq$ Mean	8.75	59	59	69	69	22	44
		Low $<$ Mean		41	41	31	31	28	56
8.	Self Confidence	High $\geq$ Mean	29.92	63	63	49	49	31	62
		Low $<$ Mean		37	37	51	51	19	38
9.	Persuasiveness	High $\geq$ Mean	13.86	56	56	47	47	34	68
		Low $<$ Mean		44	44	53	53	16	32

Sl. No.	Variable	Category	Mean	Undergraduate students N=100		Postgraduate students N=100		Unemployed graduates N=50	
				Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
10.	Self esteem	High $\geq$ Mean	92.92	44	44	41	41	37	74
		Low $<$ Mean		56	56	59	59	13	26
11.	Thoughtfulness	High $\geq$ Mean	13.00	62	62	58	58	28	56
		Low $<$ Mean		38	38	42	42	22	44
12.	Self reliance	5		14	14	13	13	6	12
		4		44	44	27	27	24	48
		3		38	38	52	52	17	34
		2		4	4	6	6	2	4
		1		0	0	2	2	1	2
		0		0	0	0	0	0	0
13.	Attitude towards self employment	High $\geq$ Mean	7.56	64	64	44	44	30	60
		Low $<$ Mean		36	36	56	56	20	40
14.	Innovation proneness	High $\geq$ Mean	16.46	62	62	58	58	39	78
		Low $<$ Mean		38	38	42	42	11	22
15.	Attitude towards competition	High $\geq$ Mean	48.4	57	57	54	54	29	58
		Low $<$ Mean		43	43	46	46	21	42
16.	Sociability	High $\geq$ Mean	11.6	54	54	45	45	28	56
		Low $<$ Mean		46	46	55	55	22	44
17.	Religion	1		74	74	67	67	35	70
		2		8	8	5	5	5	10
		3		18	18	28	28	10	20

Sl. No.	Variable	Category	Mean	Undergraduate students N=100		Postgraduate students N=100		Unemployed graduates N=50	
				Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
				18.	Management orientation	High $\geq$ Mean Low $<$ Mean	11.84	65 35	65 35
19.	Economic motivation	High $\geq$ Mean Low $<$ Mean	16.45	51 49	51 49	64 36	64 36	26 24	26 24
20.	Annual income	1 2 3 4		5 22 28 45	5 22 28 45	3 14 38 45	3 14 38 45	0 3 17 30	0 6 34 60
21.	Credit orientation	High $\leq$ Mean Low $>$ Mean	10.04	34 66	34 66	54 46	54 46	20 30	40 60
22.	Technical competency	High $\leq$ Mean Low $>$ Mean	11.84	58 42	58 42	55 45	55 45	28 22	56 44
23.	Entrepreneurial behaviour	High $\leq$ Mean Low $>$ Mean	106.26	56 44	56 44	32 68	32 68	32 18	64 36

The result implies that except in the case of postgraduate students and female students, in all the other groups majority of the respondents had high self confidence. The observation of Desai (1991) deserves mention in this regard. According to him independence and autonomy are found only in negligible qualities in an Indian women. She is held back by her own pre-conceived notion of her role in life. She sees herself in the image of a perfect mother, wife and house-maker. This results in a conflict which inhibits her confidence and independence. In the case of postgraduates majority of the respondents are females which might be reason for lower distribution of respondents in the higher category in the case of postgraduate students.

#### 4.2.1.9 Persuasiveness

With respect to postgraduate category more than 50 per cent of the respondents had only lower persuasiveness. The distribution was 56 and 68 per cent in high group for undergraduate students, and unemployed graduates respectively (Table 4.2). Table 4.3 evidenced that more than 50 per cent in the case of male and female students belonged to the high category. An important personality factor which contributes to success of an entrepreneur is his personal relations, tactfulness and his ability to influence others. Unless he is able to persuade his customers in his line, and maintain good relations with him, he will not get continued

patronage. Moreover, he should have good relation with his employees whom he shall persuade and motivate to perform their job at a high level of efficiency.

The result implies that majority of the respondents have the ability to persuade and influence others. The results that the percentage of postgraduate in high group of persuasiveness was low is also reflective of the rational for career choice-among the postgraduates . More often than for the postgraduate students have an inkling for research pursuits which does not demand much persuasibility and attributions of communication skills and hence the results observed in the study. Postgraduate students have more inclination towards research. They come for post graduation may be due to their lower aptitude for field work where in communication skill is very much needed.

#### 4.2.1.10 Self esteem

The results presented in Table 4.2 indicated that unemployed category had more distribution of respondents in the high self esteem group (74 per cent). In the case of undergraduate students, postgraduate students, male and female group more than 50 per cent of the respondents belonged to the low esteem group.(Table 4.2 and Table 4.3). Positive self esteem which includes self confidence as well as self efficiency and a positive image of one's abilities and

achievements are pre-cursor of successful entrepreneurship. In Kerala condition unemployment among agricultural graduates was not a serious problem till recently due to the multitude avenues of employment opportunities that existed. Hence the respondents might have brushed aside the present stagnation as a temporary phenomenon and they might be optimistic of getting better job opportunities in the near future. The unemployed group is a temporary group who are expecting good job in the near future and are qualified professionally. This might have enhanced their self esteem.

#### 4.2.1.11 Thoughtfulness

As evidenced by the Table 4.2 and 4.3, 50 per cent of the respondents in all the categories had high thoughtfulness with the highest being the undergraduate category and female category (62 per cent). The students joining this course form the cream of student community who are expected to have analytical thinking ability. Moreover the course curriculum is such that this specific ability is very much wanted and hence they will have to work hard to cope up with the demand. Science and technology graduates due to their constant interaction with science and material subjects, acquire a mentality for objective consideration and evaluation of any issue. Given to hard work, thoroughness and perceiving things squarely in any moment of crisis they are better qualified to face a problem and find out possible

solution. Their analytical thinking ability helps them a lot in this perspective.

#### 4.2.1.12 Self reliance

Thirty eight per cent, 34 per cent, 33 per cent and 49.3 per cent of the respondents opined that 77.99 per cent of their future depended on self in the case of undergraduate, unemployed, male and female group respectively. In the case of postgraduate students 52 per cent opined that 50.74 per cent of their future depended on self. None of the respondents in any of the group said that their future “did not at all” depended on self (Table 4.2 and 4.3).

A critical analysis of the Tables 4.2 and 4.3 revealed that majority of the respondents in all groups had high self reliance. Another interesting observation made is that none of the respondents opined that their future did not at all depended on self which indicate that the youngsters are very much self reliant.

An entrepreneur has the urge to capitalise his technical and professional skills for himself than working for others. He feels that his destiny is his own making. The pride of being a lord of one’s own destiny essentially prompts a prospective entrepreneur to venture into an enterprise. So self reliance is a desirable trait in a prospective entrepreneur.

**Table 4.3. Profile characters of Male and Female students**

Sl No	Variable	Category	Mean	Male N=100		Female N=150	
				Frequency	Per-centage	Frequency	Per-centage
1.	Nativity	Rural		54	54	70	46.66
		Urban		46	46	80	53.33
2.	Father's Occupation	0		4	7	3	2.00
		1		78	78	129	86.00
		2		18	18	18	12.00
3.	Mother's Occupation	0		52	52	80	53.33
		1		47	47	69	46.00
		2		1	1	1	00.67
4.	Marks obtained in pre degree	High $\geq$ Mean		35	35	96	64.00
		Low $<$ Mean		65	65	54	36.00
5.	Marks obtained in B.Sc.	High $\geq$ Mean	83.91	47	47	112	74.67
		Low $<$ Mean		53	53	38	25.33
6.	Overall Grade Point Average	High $\geq$ Mean	8.67	48	48	101	67.33
		Low $<$ Mean		52	52	49	32.67
7.	Overall Grade Point Average in work experience	High $\geq$ Mean	8.75	53	53	97	64.66
		Low $<$ Mean		47	47	53	35.33
8.	Self Confidence	High $\geq$ Mean	29.92	62	62	81	54.00
		Low $<$ Mean		38	38	69	46.00
9.	Persuasiveness	High $\geq$ Mean	13.86	58	58	79	52.66
		Low $<$ Mean		42	42	71	47.33
10.	Self esteem	High $\geq$ Mean	92.92	48	48	74	49.33
		Low $<$ Mean		52	52	76	50.67
11.	Thoughtfulness	High $\geq$ Mean	13.00	55	55	93	62.00
		Low $<$ Mean		45	45	57	38.00
12.	Self reliance	5		15	15	18	12.00
		4		47	47	48	32.00
		3		33	33	74	49.33
		2		4	4	8	53.00
		1		1	1	2	01.33
		0		0	0	0	00.00
13.	Attitude towards self employment	High $\geq$ Mean	7.56	47	47	91	60.67
		Low $<$ Mean		53	53	59	39.33
14.	Innovation proneness	High $\geq$ Mean	16.46	68	68	77	51.33
		Low $<$ Mean		32	32	73	48.67



Sl No	Variable	Category	Mean	Male N=100		Female N=150	
				Frequency	Per-centage	Frequency	Per-centage
15.	Attitude towards competition	High $\geq$ Mean	48.4	58	58	82	54.67
		Low < Mean		42	42	68	45.33
16.	Sociability	High $\geq$ Mean	11.6	51	51	76	50.67
		Low < Mean		49	49	74	49.33
17.	Religion	1		71	71	105	70.00
		2		11	11	7	04.70
		3		18	18	38	25.33
18.	Management orientation	High $\geq$ Mean	11.84	66	66	105	70.00
		Low < Mean		34	34	45	30.00
19.	Economic motivation	High $\geq$ Mean	16.45	53	53	94	62.67
		Low < Mean		47	47	56	37.33
20.	Annual income	1		0	0	8	05.33
		2		18	18	21	14.00
		3		32	32	51	34.00
		4		50	50	70	46.70
21.	Credit orientation	High $\geq$ Mean	10.04	51	51	73	48.67
		Low < Mean		49	49	77	51.33
22.	Technical competency	High $\geq$ Mean	11.84	63	63	83	55.33
		Low < Mean		37	37	67	44.67
23.	Entrepreneurial behaviour	High $\geq$ Mean	106.26	55	55	65	43.33
		Low < Mean		45	45	85	56.67

#### 4.2.1.13 Attitude towards self employment

In the case of attitude towards self employment 64 per cent of undergraduates, 60 per cent of unemployed graduates and 44 per cent of postgraduate students belonged to high group (Table 4.2). Table 4.3 indicate that 60 percent of female students 47 per cent of male students belonged to high category.

Self employment implies creation of a job for oneself by engaging in a gainful economic activity and utilising one's creativity, skill or talent for earning livelihood. A self employed person is his own master. Having a positive attitude towards self employment pre disposes a person to look out for self employment avenues rather than wait for regular employment.

In the case of undergraduates and unemployed with the demock's sword of unemployment hanging over the heads, the students now are gearing themselves up to take up self employment ventures. The curriculum and syllabi are also restricted now to meet those emerging challenges.

As to the postgraduates who have completed undergraduate courses and who have a flair for teaching and research pursuits take up postgraduate programmes

preponderantly. They reckon their postgraduate courses as a preparing ground for employment in University and Government sector. Naturally, they would exhibit relatively unfavourable attitude towards self employment.

#### 4.2.1.14 Innovation proneness

Seventy eight per cent of unemployed category belonged to the high group (Table 4.2). In the case of undergraduate and postgraduate group percentage distribution in higher group 62 and 58 percentage respectively. In the case of male group 68 per cent of the respondents and in female group 51.33 percent had high innovation proneness.

This is an encouraging trend noticed among the students because entrepreneurial behaviour depends on innovation proneness theoretically.

Many of the case studies done on successful entrepreneurs throw light on the fact that exhilaration and the thrill experienced in exploring new fields, new depths and knowledge are prompting them to pursue such ventures. Schumpeter's (1934) theory postulates an entrepreneur as an innovator. According to him psychologically entrepreneurs are not solely motivated by profit. Schumpeterian 'innovation' is a creative response to a situation.

#### 4.2.1.15 Attitude towards competition

A critical examination of the Table 4.4 revealed that among the undergraduate students and unemployed graduates the distribution of respondents in the high category was 58 per cent whereas in the case of postgraduates the distribution in high group was 54 per cent. As to the males 58 per cent and the females 54.67 per cent belonged to high category. The system of education currently prevalent in Kerala instill competitive spirit among the students right from pre-school nursery. Competition enhances achievement. In every field of life one has to face tight competition. The ambition to achieve builds up achievement pressure in the individual concerned and a strong inner concern with achievement develops in him. In any industry the entrepreneur has to survive competition. The cardinal principle is not to enter into unhealthy competition at the same time have a positive approach to healthy competition which will act as an impetus to achieve more.

#### 4.2.1.16 Sociability

The results indicated that except in the case of postgraduate students in all the other group the per cent distribution of respondents in high group was more than 50. In the case of postgraduate students 55 per cent of the respondents belonged to the low group (Table 4.2).

Similarly for male and female students also more than 50 per cent belonged to the high category.

The results implied that except in the case of postgraduate students majority had high sociability. Researchers have little time and inclination to socialise. They have lesser aptitude for sociability may be due to their research inclination.

#### 4.2.1.17 Religion

Seventy four per cent of the respondents in undergraduate, 67 per cent of postgraduates, and 70 per cent of the unemployed were Hindus. On the basis of gender 71 per cent male group and 70 per cent in female group were Hindus. With respect to other religions 8 per cent of the undergraduates, 5 per cent of the postgraduates, 10 per cent of unemployed group, 11 per cent of male group and 47 per cent of female group were Muslims, and 18 per cent of undergraduates, 28 per cent of postgraduate and 32 per cent of unemployed group, 34 per cent of male and 30 per cent of female group were Christians.

These results imply that the representation of Muslims in agricultural course is very low when compared to Hindus and Christians.

Reddy and Reddy (1992) have opined that caste connections facilitates emergence and concentration of entrepreneurship within certain caste groups.

Chandra (1991) reported that caste makes no significant contribution to entrepreneurial success.

Thangamuthu and Manimekalai (1991) precluded any relationship between caste factor and success level of entrepreneurs.

#### 4.2.1.18 Management orientation

An important observation made in the Table 4.2 and 4.3 is that more than 65 per cent of the respondents in all the five groups had high management orientation. This implies that majority of the respondents have high management orientation which is a Sine qua non for any professional graduate. The students of agricultural colleges are limited in number and are a close knit group. In addition to course curriculum they are involved in many extra curricular activities like seminars, workshops, debates etc. which requires management of men and material. Since the size of agri student community is small, each and every student gets an opportunity to become part and parcel of every programme. This might have again helped to improve their management orientation.

Management skills and leadership are important facets of entrepreneurship. A successful entrepreneur essentially should have managerial ability. Entrepreneurship is a reflection of a person's ability to multiply himself by effectively delegating responsibilities to others. He is an organisation builder who must be able to harness the new ideas of different innovators to the rest of the organisation. In this context the high management orientation exhibited by the students is a desirable trait.

#### 4.2.1.19 Economic motivation

In the case of postgraduate students more than 60 per cent of the respondents belonged to the high category. Forty nine and 48 per cent had only low economic orientation in the case of undergraduate students and unemployed graduates (Table 4.2). In the case of female more than 60 per cent of females and more than 50 per cent of males had high economic motivation. Most of students opt for professional course due to the economic security it offers once one becomes qualified. So it is logical that the students of agriculture have high economic motivation.

An entrepreneur is motivated by the expectation of profit he will get by perusing an enterprise. Financial skills are definitely a desirable trait in a prospective

entrepreneur. Hence the trend noticed among the students is desirable.

#### 4.2.1.20 Annual income

As to the postgraduate students 60 per cent of the respondents belonged to families whose annual income was above 50,000 where as in the case of unemployed graduates 45 per cent of the respondents belonged to families whose annual income was above 50,000 (Table 4.2).

Among male students 50 per cent of the respondents belonged to families whose annual income was above 50,000. As to the females only 46.7 per cent of them belonged to families whose annual income was above 50,000 (Table 4.3). Table 4.2 and 4.3 also indicated that twenty eight per cent of undergraduates, 38 per cent of postgraduates, 34 per cent of unemployed graduates, 32 per cent of male group and 34 per cent of female group belonged to families whose annual income was between Rs.25,001 to Rs.50,000.

The results revealed that parental annual income of majority of the respondents were above 50,000 which implies that most of the respondents hail from economically sound families. Agricultural courses being a professional



course involves more expenditure in terms of fees and other charges. Moreover, the course is offered only from limited colleges widely spaced in the state which necessitate the students to stay in the hostel adding to the expenditure. This might be the probable reason for the above said result.

#### 4.2.1.21 Credit orientation

It could be seen from the Table 4.2 that 66 per cent of undergraduate students 60 per cent of unemployed graduates and 46 per cent of postgraduate students had low credit orientation. As evidenced from Table 4.3, 51.33 per cent of female students and 49 per cent of the male students had low credit orientation.

The results point to the fact that in the case of undergraduate students and unemployed graduates, majority had low credit orientation where as in other three categories the distribution was almost equal in the two groups.

Murthy *et al* (1991) in their study revealed that most of the entrepreneurs started with their own capital or raised it by sale of land or property, but they were reluctant to go for bank financing probably due to the difficulties experienced by those who had sought the help of financial institutions and commercial banks. This implies that though

the entrepreneurs had low credit orientation, they were successful entrepreneurs. So one can hope that low credit orientation of the undergraduates and unemployed graduates won't stop them from perusing self employment.

#### 4.2.1.22 Technical competency

The data revealed that more than 55 per cent of the respondents had high technical competency in the case of undergraduate students and postgraduate students where as only 44 per cent of unemployed graduates had high technical competency (Table 4.2).

The results presented in Table 4.3 implied that more than 55 per cent of females had high technical competency where as only 37 per cent of the males had high technical competency in the case of male students.

The students are exposed to different courses in agriculture to develop their technical competency in this field, both on theoretical and practical side. This might be the probable reason for higher distribution of respondents in high category.

#### 4.2.1.23 Entrepreneurial behaviour

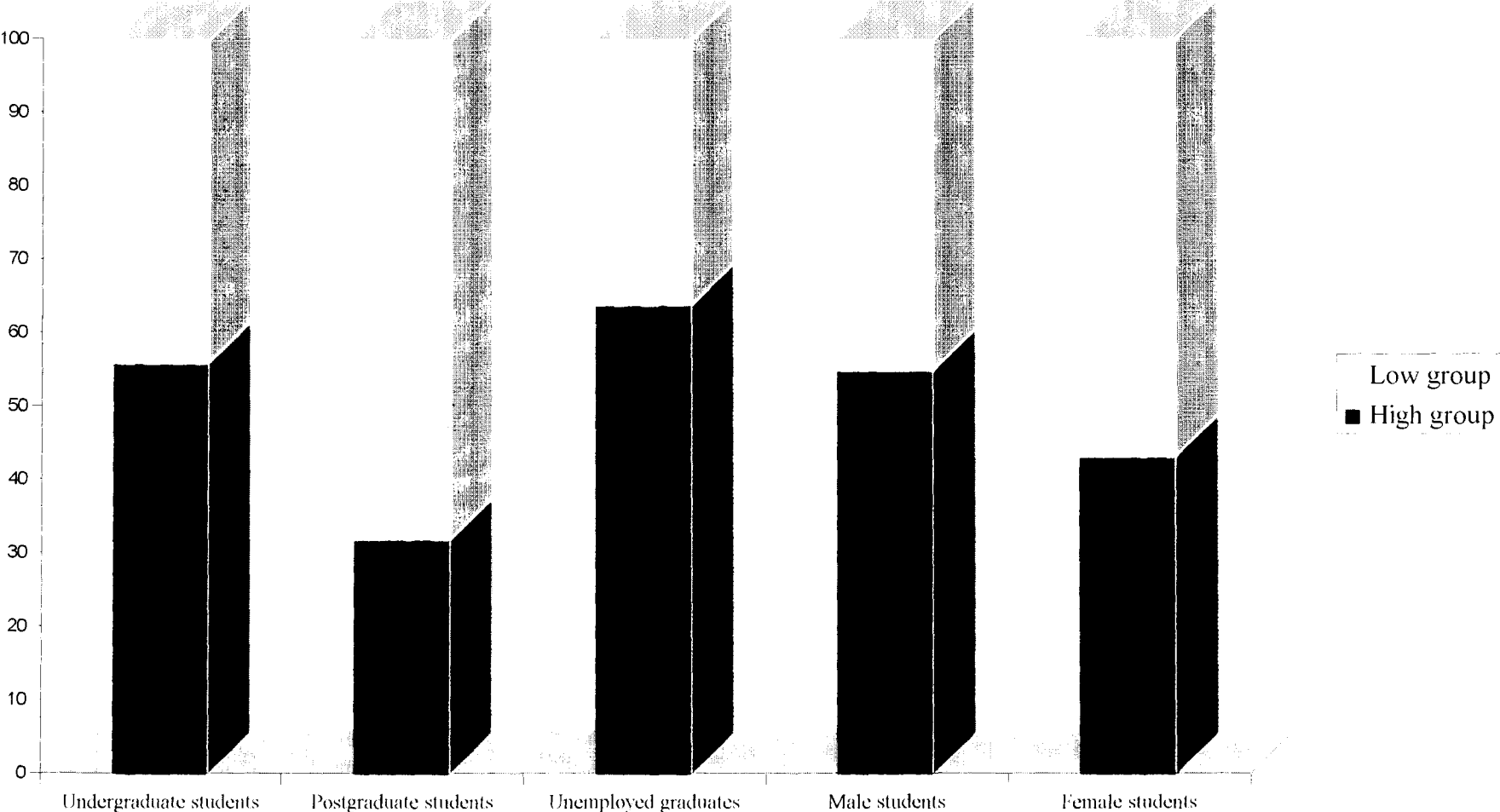
It could be seen from the Table 4.2 that more than 50 per cent of the respondents had high entrepreneurial behaviour in the case of undergraduates and unemployed graduates where as only 32 per cent of postgraduate group had high entrepreneurial behaviour (Table 4.2).

It was also found that 45 per cent of the male and 56.67 per cent of female group had only lower entrepreneurial behaviour (Table 4.2)

The results indicated that the distribution of respondents in higher category is higher in the case of undergraduates students, unemployed graduates and male students. The traits such as attitude towards self employment, self esteem, self confidence and management orientation are found to be higher among the undergraduate, unemployed graduate and male students. All these trends are theoretically contributing to entrepreneurial behaviour. This might probably be the reason for obtaining high distribution of respondents in the high category.

With respect to female students and postgraduate students the distribution was lower. The distribution of respondents with respect to self confidence was found to be

**Fig 2. Distribution of respondents in high group and low group based on entrepreneurial behaviour**



higher in the lower category in these two groups. This might have lowered their entrepreneurial behaviour. Moreover the distribution of female students, is more in postgraduate category. The postgraduates have orientation towards research and may have higher occupational aspiration befitting their educational qualification more than what entrepreneurship provides. This again might have contributed to the lower distribution of respondents in high group with respect to entrepreneurial behaviour in the case of postgraduate students.

A person's potentialities should be explored fully and invested profitably in the occupation he engages in. Such a state of affairs not only leads to job satisfaction and higher production but also alleviate many problems. Usually no attention is paid to the individual talents and capacities attitudes and aptitude and hence most of the time one finds round pegs in square holes misplaced dissatisfied and unenthusiastic people in most of the jobs. In this context it is essential that the entrepreneurial behaviour of students are analysed.

According to Desai (1991) the basic problem or difficulty of a woman entrepreneur is that she is a woman she has twin responsibility towards family, society and work. The attitude of society towards her and constraints in which she has to live and work are hostile. Even those men who are

planners still suffer from male reservations about a women's role and capacity. Even at government level, the licensing authorities and labour officers lack confidence in women entrepreneurs and so the women have to face more hurdles in getting things done at government level. Awareness about these limitations might have hampered her entrepreneurial behaviour.

#### 4.2.2 Mean score, Standard deviation and co efficient of variation of selected personal, social, psychological economic and technological characters and entrepreneurial behaviour of agricultural students

Table (4.4) unfolds the mean scores, standard deviation and co-efficient of variation in respect of selected personal, social, psychological, economic and technological characters under study. As evidenced from the table, high co efficient of variation was observed in respect of the following variables with sociability (79.8) in the first position followed by thoughtfulness (37.89) annual income (32.33), attitude towards self employment (29.92), credit orientation (26.88) and technical competency in the descending order. High co-efficient of variation shows poor consistency with regard to these variables. Rest of the variables did not show much variation in the sample under study, indicating relatively high consistency in the sample distribution with respect to these characters.

**Table No 4.4 Mean score, standard deviation and coefficient of variation of selected personal, social, psychological, economic and technologic characters**  
N=250

Sl. No.	Variable	Mean	Standard Deviation	Coefficient of variation
1	Marks obtained in Pre-degree	75.41	9.4	12.250
2	Marks obtained in B.Sc.	83.91	8.93	10.640
3	Overall Grade Point Average	08.67	0.534	06.160
4	Overall Grade Point Average for work experience	08.75	0.432	04.930
5	Self confidence	29.92	6.556	21.900
6	Persuasiveness	13.86	2.355	16.998
7	Self esteem	92.92	15.24	16.396
8	Thoughtfulness	13.00	4.929	37.890
9	Self reliance	11.84	1.499	12.660
10	Attitude towards Self employment	07.56	2.261	29.920
11	Innovation proneness	16.46	3.22	19.590
12	Attitude towards competition	48.4	07.62	15.740
13	Sociability	11.6	9.26	79.800
14	Management orientation	11.84	1.499	12.660
15	Economic Motivation	16.45	03.22	17.220
16	Annual income	3.67	1.182	32.230
17	Credit orientation	10.04	2.699	26.880
18	Technical competency	11.84	1.498	22.220
19	Entrepreneurial behaviour	106.26	30.30	11.570

It could be noticed from the Table (4.4) that the sample of agricultural students under study was a highly heterogeneous group with respect to psychological variables such as sociability, thoughtfulness, attitude towards self employment and self confidence. In the case of personal variables such as marks obtained in pre-degree, marks obtained in B.Sc., overall grade point average in work experience, the sample was found to be highly homogenous, but the respondents scored above average on all these variables indicating good academic achievement for most of the respondents. The students joining for a professional course like agriculture are getting selected for this course after rigorous screening through tests and interviews conducted. So the stream of students joining this course are expected to be academically brilliant and this might be the reason why most of the students were found to be above average in academic achievement. With respect to the entrepreneurial behaviour of agricultural students only low coefficient of variation was observed (11.57) which shows good consistency with regard to this variable

#### **4.2.3 Relationship of personal, social, psychological, economic and technological characters with entrepreneurial behaviour of agricultural students**

Of the twenty two variables chosen as independent variables 18 variables were considered for correlation analysis. This was done to specify both nature



and degree of relationship between each of the independent variables and the dependent variable.

In the case of other four variables viz. father's occupation, mother's occupation, nativity and religion chi-square analysis was done to know whether there is any association between entrepreneurial behaviour and variables such as father's occupation, mother's occupation, nativity and religion.

A birds eye view of the results presented in Table (4.5) and Table (4.6) brings to focus the relationship of the selected personal, psychological social, economic and technological characters with the entrepreneurial behaviour of agricultural students.

#### 4.2.3.1 Correlation of selected characters with entrepreneurial behaviour of agricultural students

##### **UNDERGRADUATE STUDENTS**

Of the 18 variables studied eight variables were found to be positively and significantly related with entrepreneurial behaviour at 1 per cent level of probability in the case of undergraduate students. They were self esteem, sociability, innovation proneness, management orientation, self confidence, attitude towards competition, persuasiveness and self reliance in the descending order of 'r' value. Rest of the variables revealed no significant relationship with dependent variable. Though not significant marks obtained in

pre degree, exhibited a negative trend whereas the rest showed a positive trend.

### **POSTGRADUATE STUDENTS**

A glance at Table 4.7 reveals that a positive and significant relationship exists between entrepreneurial behaviour of postgraduate students and nine variables of which four variables viz. attitude towards competition, self esteem, management orientation, and innovation proneness were significant at 1 per cent level of probability whereas self confidence, persuasiveness, sociability, self reliance and attitude towards self employment were significant at 5 per cent level of probability.

### **UNEMPLOYED GRADUATE STUDENTS**

Unemployed graduate's entrepreneurial behaviour exhibited significant positive relationship with persuasiveness, management orientation and innovation proneness at 1 per cent level of probability. Self confidence and credit orientation were significant at 5 per cent level of probability. All the other variables showed non significant relationship. A negative trend was observed with respect to variables viz. marks obtained in pre degree, marks obtained in B.Sc., O.G.P.A and O.G.P.A in work experience.

## MALE RESPONDENTS

Data presented in Table 4.6 shows that in the case of male respondents, there exists a positive significant relationship between entrepreneurial behaviour and nine variables which were significant at 1 per cent level of probability. They were sociability, self reliance, attitude towards competition, self esteem, persuasiveness, innovation proneness, management orientation and attitude towards self employment. Technical competency showed positive significant relationship with entrepreneurial behaviour at 5 per cent level of probability. Though not significant negative trends was seen in the case of marks obtained in pre degree, marks obtained in B.Sc., O.G.P.A, and O.G.P.A in work experience . In the rest of the cases positive trend was seen.

## FEMALE RESPONDENTS

With regard to female agricultural students variables like self confidence, self esteem, sociability, management orientation, innovation proneness and attitude towards competition showed significant positive relationship at 1 per cent level of probability. Self reliance, attitude towards self employment, persuasiveness and annual income were found to have positive significant relation with entrepreneurial behaviour at 5 per cent level of probability. Except in the case of O.G.P.A in work experience all the other variables showed positive relationship.

The findings are discussed below.

#### *4.2.3.1.1 Personal variables*

##### *4.2.3.1.1.1 Marks obtained in pre degree course*

The computed value of 'r' (Table 4.9) indicates that there was no significant relationship between marks obtained in pre-degree, and the entrepreneurial behaviour of undergraduates, postgraduates, unemployed, male and female category. Though not significant the 'r' value showed a negative trend in the case of undergraduate, unemployed and male category where as in the case of female and postgraduate group the trend was positive.

Education imparted today provides mainly academic learning for mental and spiritual development. Unless it conveys the necessary skills for economic development in addition to cultural and social development it will not have any impact on the entrepreneurial behaviour of the students. Marks obtained are reflection on their academic achievement and does not tell upon their aptitude and potentials as an entrepreneur.

Mohan and Rao (1992), Reddy and Reddy (1992) have reported that level of education and success level of entrepreneurs are not related.

Kanilkar and Sebastian (1993) reported that the business selected by women entrepreneurs had no linkage with their educational qualifications.

Babu (1978) reported that the performance of entrepreneurs was negatively related to the level of education and academic ability. This observation supports the present finding.

#### 4.2.3.1.1.2 Marks obtained in B.Sc.

In the case of marks obtained in B.Sc. in all the five groups there was no significant relationship with entrepreneurial behaviour.

In the case of male category, postgraduate, and unemployed category the trend was negative. Persons with higher academic achievement may aspire for jobs befitting their academic achievement and may not be satisfied with the professional status of a self employed graduate. This might be the reason for the negative trend observed. The results obtained are in line with the findings of Edlefsen (1960) who reported that greater percentage of students receiving 'A' and 'B' grades preferred high level of occupation.

#### 4.2.3.1.1.3 Overall Grade Point Average

As in the case of marks obtained in pre-degree, overall grade point also showed non significant relation with entrepreneurial behaviour in the case of undergraduate, postgraduate, unemployed graduates, male and female students. This results implies that the academic achievements and entrepreneurial behaviour are not related.

#### 4.2.3.1.1.4 Overall Grade Point Average in work experience

The computed value of 'r' given in Tables 4.5 and 4.6 showed that relationship between grade in work experience and entrepreneurial behaviour of agricultural students in all categories was negligible. Except in the case of undergraduates it showed a negative trend.

The grade obtained for work experience depends greatly on the physical effort put in by the students. Since the trend showed is negative in general, it indicates that the willingness and ability to put in physical strain alone is not an indication of high entrepreneurial inclination.

Considering the personal variables like marks obtained in pre-degree, marks obtained in B.Sc., O.G.P.A, and O.G.P.A(work experience) did not show any significant relationship with entrepreneurial behaviour in the case of

undergraduates. Hence the null hypothesis that there exist no significant relationship between personal variables and entrepreneurial behaviour of undergraduate students was accepted with respect to these variables.

In the case of postgraduate students, the personal variables mentioned above did not exhibit any significant relationship with entrepreneurial behaviour. Therefore the null hypothesis that there exist no significant relationship between personal variables and entrepreneurial behaviour of postgraduate students was accepted.

Marks obtained in pre degree, marks obtained in B.Sc., O.G.P.A and O.G.P.A(work experience) were found to have no significant relationship with entrepreneurial behaviour of unemployed graduates. In this context the null hypothesis that there exists no significant relationship between personal variables and entrepreneurial behaviour was accepted.

With respect to the personal variables like marks obtained in pre degree, marks obtained in B.Sc., O.G.P.A and O.G.P.A(work experience) were found to have no significant relationship with entrepreneurial behaviour of male students. Hence the null hypothesis that there exist no significant

relationship between personal variables and entrepreneurial behaviour of undergraduate students *was accepted* .

In the case of female students also no relationship was established between the above mentioned variables and entrepreneurial behaviour and hence the null hypothesis was accepted.

#### *4.2.3.1.2. Psychological variables*

##### *4.2.3.1.2.1. Self confidence*

The computed value of 'r' indicates that there is significant positive relationship between self confidence and entrepreneurial behaviour in all the cases. Self confidence is one of those personality attributes that encourage or facilitate the decision to become an entrepreneur. As an entrepreneur one has to pioneer new products and new methods of production which are economically sound. As a pioneer he has to bear risk. He has to face uncertainty and anxiety associated with new venture. The courage to face and overcome this anxiety will be more in a self confident person. The result is in line with the observation made by Christopher (1969), Tandon (1975) and Ramakrishnan (1979) who have all opined self confidence as one of the characteristic trait of an entrepreneur and that it reflect on the entrepreneurial behaviour of an individual.



**Table No 4.6 Correlation coefficient between selected independent variables and Entrepreneurial behaviour of male and female agricultural students**

SlNo	Variable	Correlation coefficient	
		Male N=100	Female N=150
1	Marks obtained in Pre-degree	-0.1073	0.0684
2	Marks obtained in B.Sc.	-0.1616	0.1020
3	Overall Grade Point Average	-0.1500	0.1393
4	Over all Grade Point Average for work experience	-0.1470	-0.0187
5	Self confidence *	0.3022**	0.2671**
6	Persuasiveness	0.3771**	0.2068**
7	Self esteem	0.3796**	0.3992**
8	Thoughtfulness	0.0802	0.1202
9	Self reliance	0.3927**	0.1762*
10	Attitude towards Self employment	0.3074**	0.1686*
11	Innovation proneness	0.3766**	0.3930**
12	Attitude towards competition	0.3861**	0.2512**
13	Sociability	0.4391**	0.2076**
14	Management orientation	0.3676**	0.2661**
15	Economic Motivation	0.1506	0.0918
16	Annual income	0.0400	0.1803*
17	Credit orientation	0.1306	0.0620
18	Technical competency	0.2201*	0.0899

\* Significant at 0.05% level  
\*\* Significant at 0.01% level

#### 4.2.3.1.2.2. Persuasiveness

In the present study it was observed that there is positive significant relationship between persuasiveness and entrepreneurial behaviour of agricultural students in all the categories. Entrepreneurs typically start with little more than an idea in their head. To transform that idea into reality, they must persuade people to join them in new ventures, persuade friends, relatives and even strangers to invest in his venture or lend money, persuade suppliers to extend credit and finally persuade customers to part with their hard earned money for a new product or service from an unproven firm. In any business the art of persuasion is as important as the product. Constant communication with customers is required to persuade them to buy your service. An entrepreneur during the course of his activities comes across many types of persons with whom he has to deal. He has to make them work for him, with him and help him to obtain his objectives. Hence he should be a person who likes working with people and who has skills of dealing with people. He may be required to influence people and make them think in his way and act accordingly.

The findings is in conformity with the findings of Rao and Mehta (1978) who listed need for influencing others as one of the psychological factors that influence entrepreneurship. According to Ray (1993) persuasive

communication skill is one of the skills an entrepreneur should essentially have.

#### 4.2.3.1.2.3 Self esteem

In the case of self esteem also significant positive relationship was observed in all categories except in the case of unemployed graduates but here also the trend was positive (Table 4.5 & 4.6).

A positive self concept, which include a positive image of ones abilities and achievements are some of the very much needed qualities of an entrepreneur as suggested in E.D.P strategy of the central Government. This gives strength to the present findings. Self esteem is closely associated with and reinforce one's risk taking propensity. Those with very low self esteem either take no risks or take very higher risks, each action reinforces their initial premise that they are unworthy individuals. Those with a healthy level of self esteem are able to take risks appropriate to various situations that arise.

A successful entrepreneur is an achiever who directs his fantasies towards the accomplishment of worthwhile goals and set standards of excellence in what he is doing. This is based upon the awareness of his strength and

weakness. He uses positive knowledge to support his thinking. It builds up his confidence to step into new venture.

The results support the findings of Leonard *et al* (1973), Arthur (1977) and Bachman and O'Mally (1977) who have observed positive relationship between self esteem and vocational choice.

#### 4.2.3.1.2.4. Thoughtfulness

As evidenced from the Tables 4.5 and 4.6 computed values of 'r' suggest that there is negligible relationship between thoughtfulness and entrepreneurial behaviour in all the categories. The researcher has not come across any study relating significant relationship of thoughtfulness with entrepreneurial behaviour.

The respondents being students are not actually practicing entrepreneurs. Though theoretically we expect an entrepreneur to have good thinking introversion and reflectiveness the result obtained imply no relationship between thoughtfulness and entrepreneurial behaviour. May be it is because the respondents lack experience in the field of entrepreneurship. More over being professional students they have constant interaction to objectively consider and evaluate things. It may not have necessarily improved their entrepreneurial behaviour.

#### 4.2.3.1.2.5. Self reliance

In the case of self reliance, significant positive relationship was observed with entrepreneurial behaviour in all groups except in the case of unemployed where again though not significant positive trend was observed (Table 4.5).

An entrepreneur expects himself to be the master of time and space around him and feel responsible for his productivity. He likes to be his own master and has sufficient confidence in him to take up new ventures.

The entrepreneurs tend to believe strongly in themselves and their activities to achieve the goals they set. They also believe that events in their lives are mainly self determined that they have a major influence on their personal destinies and have little belief in fate. The study reaffirms the necessity of self reliance for a prospective entrepreneur.

The finding is in line with the results obtained by Porchezian (1991) who observed positive and significant relation between self reliance and entrepreneurial behaviour of farmers.

Sharma (1990) in a comparative study done on Indian and Philippino entrepreneurs remarked that most of the entrepreneurs were self-reliant about entrepreneurial pre requisites.

#### 4.2.3.1.2.6. Attitude towards self employment

The computed value of 'r' given in the Table 4.5 and 4.6 showed that the relationship between attitude towards self employment and entrepreneurial behaviour are significant and positive in the case of male and female and postgraduate category whereas in the case of undergraduate students and unemployed graduates the relationship was not significant but the trend was positive.

The usual practice of recruiting the educated for certain jobs on the basis of their educational qualification leads new job seekers to believe that they are entitled to such job. This might be reason for not obtaining any relationship between attitude towards self employment and entrepreneurial behaviour of undergraduates and unemployed graduates. Moreover the security of employment within government owned sectors may be dissuading them from developing a positive approach to entrepreneurship . Whereas in the other categories their perception about self employment might be different.

The significant positive relationship obtained is logical because a favourable mental disposition towards self employment necessarily improves the entrepreneurial behaviour of a person. Unless one has a favourable attitude towards the positive aspects of self employment over and above its negative aspects, his entrepreneurial behaviour will naturally be lower.

These findings derived support from the research results reported by Pradeep Kumar (1993) and Jayalekshmi (1996).

#### 4.2.3.1.2.7. Innovation proneness

It is obvious from the Tables 4.5 and 4.6 that innovation proneness has high positive significant relationship with entrepreneurial behaviour in the case of all categories.

Psychologically entrepreneurs are not solely motivated by profit. It is the urge to be creative, to try out new methods, to trode the untrodden paths that prompts many an entrepreneur to enter an enterprise . It is the creative response to a situation that helps the entrepreneur to try new things. The desire and eagerness to acquire new and improved technologies from different sources is the reflection of innovativeness which ultimately might have increased the

entrepreneurial spirit among the respondents. This sort of positive orientation leads them to be an entrepreneur. It also shows that they are eager to take up fresh challenges and test their initiative in order to succeed in their venture. An entrepreneur will search for changes and have the willingness to try out new methods. The present findings are in conformity with the findings of Rao and Mehta (1978), Nandapurkar (1982), De(1986), Pantulu (1989) and Porchezian (1991).

#### 4.2.3.1.2.8. Attitude towards competition

The computed 'r' values (Tables 4.5 and 4.6) indicate that there was significant and positive relationship between attitude towards competition and entrepreneurial behaviour in all categories except in the unemployed graduates.

Competition involves a goal which being scarce cannot be shared by or appear un-shareable to the individual concerned. Competitive and assertive attitude are indicative of one's confidence of success. A successful entrepreneur needs to have faith in himself and a positive approach to healthy competition. It makes one strive for betterment so that his production is qualitatively if not quantitatively better off than that of his competitors. In any business one has to face tight competition in the present world. Having a



positive mental disposition towards competition might have boosted the respondents entrepreneurial spirit.

The observation made by Rao and Mehta (1978) supports this findings who enlisted competition as one of the factors that influence entrepreneurship.

Among the psychological variables six variables viz. self esteem, attitude towards competition, persuasiveness, self reliance, innovation proneness and self confidence were found to have significant relationship with entrepreneurial behaviour of undergraduate students. In these circumstances the null hypothesis that there is no significant relationship between these variables and entrepreneurial behaviour stands rejected. With respect to attitude towards self employment and thoughtfulness the null hypothesis was accepted.

As to the postgraduate students seven variables were found to have significant positive relationship and these were, attitude towards competition, self esteem, innovation proneness, self confidence, persuasiveness and self reliance. Therefore the null hypothesis formulated was rejected and alternate hypothesis was accepted.

In the case of unemployed graduates three variables viz., self confidence, persuasiveness and innovation proneness were found to have significant relationship with entrepreneurial behaviour and hence the hypothesis that there exist no relationship between entrepreneurial behaviour and psychological variables stands rejected. For the other psychological variables the null hypothesis was accepted.

In the male category except thoughtfulness all the other psychological variables were found to establish significant relationship and hence the hypothesis that there is no significant relation between psychological variables and entrepreneurial behaviour stands rejected except in the case of thoughtfulness.

As to the female category similar results were obtained as the in the case of male category with respect to psychological variables. So the hypothesis that there is no significant relation between psychological variables and entrepreneurial behaviour stands rejected except in the case of thoughtfulness.

#### *4.2.3.1.3. Sociological variables*

##### *4.2.3.1.3.1. Sociability*

On examining the 'r' values (Table 4.5 and 4.6) it is evident that significant positive relationship exists between sociability and entrepreneurial behaviour of agricultural students in the case of male, female, undergraduate and postgraduate category. For unemployed category though not significant, the value obtained was relatively higher and positive.

A self employed person is his own master. Patience and qualities like impressing and getting along well with people pleasant disposition and a sociable temperament are golden assets needed in an entrepreneur. Entrepreneurship being a people intensive activity, without good socialisation it will be very difficult for an entrepreneur to succeed. As one socialises one gets more exposure and wider contacts with people in different fields. Thus a liaison is established for the entrepreneur with different systems of the society which will help him to run his business smoothly.

Sociability is the extent to which the individual makes friends, likes social contracts and social activity. Running an enterprise necessitates the entrepreneur to

contact and maintain relationship with many people and institutions. This might be the probable reason for obtaining such a result.

Mathew (1969) in his study on personality pattern of college students found that agricultural students are objective, sociable, emotionally stable and friendly.

The findings of Christopher (1969) are in line with the results obtained. He observed pleasing personality as one of the characteristics of entrepreneurs. The findings of Sharma (1969) that wide contacts and net works contribute to entrepreneurial development also supports this finding. Kokate and Nand (1991) in a study on entrepreneurial behaviour of small and marginal potato growers, found that extension participation which is related to sociability enhanced entrepreneurial behaviour of farmers.

Chandra (1991) in a study on entrepreneurs found that successful entrepreneurs had greater participation in social activities when compared to unsuccessful entrepreneurs. Jain and Varshney (1993) listed ability to win friends and pleasing personality as some of the major characters of entrepreneur which again validates the results obtained in the present study.

#### 4.2.3.1.3.2. Management Orientation

Management orientation showed significant positive relationship with entrepreneurial behaviour (Table 4.5 and 4.6) in all categories.

Hoselitz (1952) stated that a person who is to become an industrial entrepreneur must have additional personality traits to those resulting from a drive to mass wealth. In addition to being motivated by the expectation of profit, he must also have managerial abilities.

As the centre fulcrum of an enterprise, entrepreneur has to manage the working of the venture and also tackle the day to day problems. This includes control and direction of men and machinery most efficiently in the short run along with planning and forecasting its future expansion and policies in the long run.

Managerial ability is closely associated with entrepreneurial ability. Many case studies conducted in India among entrepreneurs point to the fact that lack of management expertise is a stumbling block to success in many of the unsuccessful cases.

To run any enterprise profitably one has to utilise the available resources in the prevailing condition to the best advantage. Personal management skill need to be developed for proper utilisation of human resources. Lack of knowledge and managerial expertise lead entrepreneurs to strategic pitfalls. They reflect as lack of experience and foresight in handling commercial transactions. This finding is supported by earlier findings of positive relationship of management orientation and entrepreneurial behaviour as reported by Ramakrishnan (1979) and Akbar (1990) Foley and Benest(1988), Kalirajan and Shand (1994).

In the case of undergraduate students sociability was found to have significant relationship with entrepreneurial behaviour. Hence the hypothesis that there is no significant relationship between sociological variables and entrepreneurial behaviour stands canceled with respect to this variable.

With respect to postgraduate students also similar results were obtained and hence the hypothesis that there exist no significant relationship between sociological variables and entrepreneurial behaviour stands canceled.

Sociability was found to have no relationship with entrepreneurial behaviour in the case of unemployed

graduates. In this case the hypothesis that there is no significant relationship between sociological variables and entrepreneurial behaviour was accepted.

With respect to male students sociability was found to have significant relationship with entrepreneurial behaviour. So the hypothesis that there exist no relationship between entrepreneurial behaviour of male students and sociological variables was rejected in this regard.

Similarly in the case of females also since positive significant relationship was established between entrepreneurial behaviour and sociability the hypothesis that there is no relationship between sociological variables and entrepreneurial behaviour stands rejected in this respect.

Since positive relationship was established between management orientation and entrepreneurial behaviour, in all the categories the hypothesis that there is no relationship between sociological variables and entrepreneurial behaviour was rejected in the case of all the categories.

#### *4.2.3.1.4. Economic variables*

##### 4.2.3.1.4.1. Economic motivation

The computed values of 'r' given in the Table 4.5 and 4.6 showed that the relationship between economic motivation and entrepreneurial behaviour is not significant in any of the cases.

Economic motivation is the profit maximisation and relative value placed by entrepreneur on economic end. The results indicate that the value one places on economic end and entrepreneurial behaviour are not related. Agricultural students at present are not much pressurised by unemployment as in the case of other graduates and professionals in various fields. There are many avenues open to them both at Government and private sector which provides them secure job and income. This might be the probable reason for such a result.

This finding contradicts the findings of S.I.E.T (1974), Perumal ~~et al~~ (1974) and Porchezian (1991).



#### 4.2.3.1.4.2. Annual income

The variable annual income showed significant positive relation with entrepreneurial behaviour in the case of female category as evidenced by the 'r' value (Table 4.6).

Families with high income have an advantage in providing the prospective entrepreneur with initial capital than families with low income. This might be the reason for obtaining a positive relation especially in the case of female category who may be reluctant to raise money from elsewhere to start an enterprise whereas in other categories they may be prepared to tap financial resources. Moreover as observed by Rani (1992) the tendency to entrepreneurship may be grater among the lower income group because they may be motivated by the need to overcome deprivation or that may be seeking entrepreneurship to fulfill the desire to be independent. This might be the reason for non significant relation observed between annual income of the family and the entrepreneurial behaviour in all the other categories.

This result is in line with the findings of Babu (1978), Singh (1978), Nandapurkar (1982), Raghavacharyulu (1983), De (1986), Porchezian (1991) and Jayalekshmi (1996) who reported a positive and significant relationship between annual income and entrepreneurial behaviour.

#### 4.2.3.1.4.3. Credit Orientation

In the case of credit orientation significant positive relation was observed in the case of unemployed graduates.

Credit oriented is a necessity for a beginner entrepreneur to have an initial take off and sustained relationship. Unemployed graduates might have started thinking about starting an agri enterprise of their own and might have considered the financial backing they need in this perspective. That might be the reason for the significant relationship observed.

The results obtained are in conformity with the findings of Porchezian (1991) who reported that farmers who had high degree of credit orientation are high in entrepreneurial behaviour also.

In the case of undergraduate students since no significant relationship was established between any of the economic variables and entrepreneurial behaviour, the hypothesis that there is no relationship between economic variables and entrepreneurial behaviour of undergraduate was accepted.

As to the postgraduate students since similar results were obtained, the hypothesis that there is no significant relation between economic variables and entrepreneurial behaviour of postgraduate students was accepted.

Coming to the unemployed graduates among the economic variables credit orientation was found to have significant relation with entrepreneurial behaviour. So with respect to this variable, the hypothesis that there is no relationship between entrepreneurial behaviour and economic variable was rejected. Coming to the of annual income and economic motivation the null hypothesis was accepted.

With respect to male students none of the economic variables was found to be related with entrepreneurial behaviour and hence the hypothesis that there is no significant relationship between economic variables and entrepreneurial behaviour was accepted.

Annual income of female students were found to have significant relationship with entrepreneurial behaviour and so the hypothesis that there is no significant relation between entrepreneurial behaviour and economic variables was rejected in this case but in the case of credit orientation and economic motivation it was accepted.

#### 4.2.3.1.5. Technical competency

In the present study it was observed that there is significant positive relationship between entrepreneurial behaviour and technical competency in the case of male category (Table 4.6) where as it was found to be non significant in all other categories. Technical competency is definitely an asset for an entrepreneur because it places him in a better position to convert a natural resource into goods and services more beneficial to the society in general and consumers in particular.

Technical competency prepares him better to take risk. It will also help him better in managing the resources efficiently. Case studies done by Chandra (1991) on successful entrepreneurs reported that many of them considered technical knowledge as very important for their success. Gaikwad (1975) observed that majority of the entrepreneur had no technical knowledge. His observation reinforce the non significant relation observed in the case of all categories other than males in present study. Even though not technically competent if a person has the essential attributes such as self confidence, self esteem, economic motivation, etc., he may be prepared to take up an enterprise. By robust common sense and strong will people have reached summit of success and prosperity without technical training.

Other studies conducted in the past revealed positive and significant relation between technical competency and entrepreneurial behaviour are that of Berna and Hazlehurst (1966), Tandon (1975), Sethy (1984), Pantulu (1989) and Jayalekshmi (1996).

Technical competency was found to have no relation with entrepreneurial behaviour of undergraduate students. Hence the hypothesis that there is no significant relationship between entrepreneurial behaviour and technological variables was accepted.

In the case of postgraduates also no relationship was established with respect to technical competency and hence the hypothesis that there is no significant relationship between entrepreneurial behaviour and technological variables was accepted.

Coming to the unemployed graduates similar results were obtained and hence the null hypothesis of no relation postulated was accepted.

In the case of male category significant positive relation was established and hence the null hypothesis

formulated was rejected and alternate hypothesis that there is relationship between entrepreneurial behaviour and technological variables is accepted.

As to the female group no relationship was established between technological variables and entrepreneurial behaviour and so the hypothesis that there is no relationship between entrepreneurial behaviour and technological variables is accepted.

#### 4.2.3.2. Association of selected characters with entrepreneurial behaviour of agricultural students

The four variables father's occupation, mother's occupation, nativity and caste are enumeration data. Enumeration data arises from recording the number of variates falling into certain classes that are either descriptive or numerical. Hence 'Test of goodness of fit' was done to know whether the entrepreneurial behaviour of agricultural students is dependent on these variables. Chi square distribution is not accurate when theoretical frequencies are fewer than five in a class. Hence the general rule is not to have theoretical frequencies fewer than five (Goulden, 1956).

##### *4.2.3.2.1 Father's occupation*

Theoretically based on the occupation of the father's the respondents were categorised as self employed,

unemployed and any other employment. In the case of all categories, since the frequency of distribution in unemployed class was below five grouping was done as self employed and any other employment.

The results presented in Table 4.7 revealed that Chi square value obtained is not significant in any of the categories which implies that entrepreneurial behaviour is not associated with father's occupation. People search for vocations that are compatible with their personalities. Earlier, father had a decisive role in the choice of career of the son. Children also used to visualise their parents as role models. But youth of today are more exposed to the advancement in the society. Scientific and technological innovations are changing their life style and approach to life. The youth may be attracted to entrepreneurship due to the monetary gain as business brings quick or more money or due to the intrinsic need for achievement. So the vocation of their parents are not influencing their entrepreneurial behaviour.

Sl. No	Variable	U.G N=100 $\chi^2$ value	P.G N=100 $\chi^2$ value	U.E N=50 $\chi^2$ value	Male N=100 $\chi^2$ value	Female N=150 $\chi^2$ value
1	Father's occupation	2.74	2.51	0	2.63	0.83
2	Mother's occupation	1.39	7.07*	1.28	0.06	0.30
3	Nativity	0.22	0.49	0.08	2.29	0.04
4	Religion	1.23	0.63	0.55	13.04*	0.03

\* Significant at 5% level of probability

This findings is in conformity with the findings of Zuckerman (1980) and Reddy and Reddy (1985). Zuckerman had observed that parents occupation is not related to the goals asserted by college women. Reddy and Reddy also didn't support the view that sons of industrialists and businessmen are more successful in running their units. Mohan and Rao (1992) reported that family occupational background and success level of entrepreneurs are not related.

The results obtained are contradictory to the findings of Babu (1978), Chacko (1990) and Zahir (1994).

#### *4.2.3.2.2 Mother's occupation*

As in the case of father's occupation due to the low frequency in the case of self employed group classification was done into two groups as employed and unemployed.

The results presented in Table 4.7 points out that Chi square values obtained are significant only in the case of postgraduate students (7.04). In the rest of the cases no association was noticed. The reasons discussed in section 4.2.3.2.1 is applicable here also.



As to the postgraduate students since they are specialising in a specific field they may have an inclination to pursue research in that field. This might be influencing their entrepreneurial behaviour moreover if mothers are also employed it will improve the financial position of the family which helps the children to further their studies.

This might be the reason for the association established between entrepreneurial behaviour and mothers occupation of the respondents.

#### *4.2.3.2.3 Nativity*

As evidenced by the results presented Table 4.7 the Chi square value showed no association between nativity and entrepreneurial behaviour of agricultural students in all the categories. This finding is in conformity with the findings of Koppel and Peterson (1975) who did not find differences in terms of regional elements in entrepreneurial behaviour.

The findings of S.I.E.T (1974), Agarwal (1975) are contrary to the findings of the present study.

#### 4.2.3.2.4 Religion

The Chi square values presented in Table 4.11 showed significant value in the case of male category (13.04) whereas in all the other categories non significant values were obtained.

The results implies that in the case of male category there is association between religion and entrepreneurial behaviour. For incumbents of entrepreneurship role, or for taking to any economic venture people require a psyche like creativity, innovativeness, achievement motivation etc. and such a psyche is determined by elements of community structure like ethical values, socialisation practices, minority character, status deprivation, One of the assumptions that sociologists make is that certain communities generate proper psyche. But in Kerala conditions, since majority of the population are educated irrespective of religion, they have a broader outlook on life. This might be the reason for non association of religion and entrepreneurial behaviour observed in all categories except that of male.

This findings is in conformity with the observations made by Morris (1967) Gaikwad and Tripathi (1970) Owen and Nandy (1978) Raghavacharyalu (1983), Singh (1985), Pantutlu (1989), Akbar (1990) who observed

religion and entrepreneurship to be related. In the case of all other categories there was no association between religion and entrepreneurial behaviour of agricultural students.

Berna's (1960) study found that caste and tradition played little role in the emergence and expansion of entrepreneurship which supports the above finding. Similarly Berna and Hazlehurst (1996) also discovered that caste was less important in determining entry into entrepreneurial endeavour.

#### **4.2.4 Predictive power and relative contribution of selected personal, social, psychological, economic and technological characters in explaining variance in entrepreneurial behaviour of agricultural students**

In the present study step-wise regression analysis was resorted to for selecting the best regression equation thereby identifying the best sub-group of variables out of many for predicting the variation in entrepreneurial behaviour and also to determine the relative contribution of each variable included in the regression model in explaining this variation. Tables 4.8, 4.9, 4.10, 4.11, 4.12 present the results of step wise regression analysis giving all the relevant steps involved.

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4.2.4.1 In this study, it could be noticed from the Table 4.8 that in the case of undergraduate students step number 11 was the last step. In the first step variable self esteem was entered and the percentage of variation explained was 13.85. In the subsequent steps sociability, self reliance, credit orientation, self confidence and marks obtained in B.Sc. with the percentage of variation explained steadily increasing as evidenced by the table. At step seven, variable self esteem was removed from the model as it proved to be non significant. Other variables included in the model were marks obtained in pre degree, innovation proneness, management orientation, and attitude towards self employment. The remaining nine variables stood out of regression model revealing their negligible contribution to entrepreneurial behaviour. As much as 63.26 per cent of the variation remains unexplained. There may be other factors such as situational variables and other psychological variables that were not included in the present study, which might affect the entrepreneurial behaviour of undergraduate students.

The best regression equation derived was

$$Y = 29.7618 + 0.1459 X_{10} + 0.9672 X_{14} + 0.7931 X_{11} + -0.4816 X_1 + 0.3992 X_5 + 0.6799 X_{17} + 1.1937 X_9 + 0.5221 X_{13} + 0.9032 X_2$$

It is clear from the above equation that a unit change in the variables attitude towards self employment, management orientation, innovation proneness, self confidence, credit orientation, self reliance, sociability and marks obtained in B.Sc. would result in an increase of 0.1459, 0.96721, 0.7931, 0.3992, 0.6799, 1.1937, 0.5221 and 0.9032 units *ceteris paribus* in entrepreneurial behaviour. However a unit change in variable marks obtained in pre-degree would lead to decrease in entrepreneurial behaviour of undergraduate students. Out of the nine variables five variables viz. management orientation, innovation proneness,

**Table 4.8 Results of step-wise regression analysis of selected variables with entrepreneurial behaviour of undergraduate students**

N=100

Step	Variable entered	Code number of variable	'F' ratio	Percentage of variation explained
1.	Self esteem	X <sub>7</sub>	15.749	13.846
2.	Sociability	X <sub>13</sub>	11.389	19.017
3.	Self reliance	X <sub>9</sub>	09.108	22.157
4.	Credit orientation	X <sub>17</sub>	07.703	24.492
5.	Self confidence	X <sub>5</sub>	06.873	26.770
6.	Marks obtained in B.Sc.	X <sub>2</sub>	06.246	28.722
7.	Self esteem-removed	X <sub>7</sub>	06.941	26.963
8.	Marks obtained in pre-degree	X <sub>1</sub>	07.317	32.067
9.	Innovation proneness	X <sub>11</sub>	06.826	34.184
10.	Management orientation	X <sub>14</sub>	06.368	35.890
11.	Attitude towards self employment	X <sub>10</sub>	05.806	36.732

self confidence, self reliance and sociability were found to have significant relation as evidenced by the correlation

results presented in Table 4.5 and 4.6. The reasons already stated and discussed earlier in section 4.2.3 applies here also. This evidence further reinforce the significance of these variables in enhancing entrepreneurial behaviour of undergraduates. Other variables which were found to have predictive power were attitude towards self employment management orientation, marks in pre degree, credit orientation and marks in B.Sc. These variables could not express their relationship with entrepreneurial behaviour in isolation as observed from correlation coefficient (Table 4.5 and 4.6), they have shown considerable influence on entrepreneurial behaviour in association with other selected factors.

The above discussion brought to light the relative contribution of each factor included in the step wise regression model towards variation in entrepreneurial behaviour of undergraduate students. It was also observed that 36.74 per cent of the variation in entrepreneurial behaviour has been explained by nine variables included in final regression model. Hence the hypothesis that there will be no significant contribution for selected variables in explaining variation in entrepreneurial behaviour of undergraduate students stands rejected.

## POSTGRADUATE STUDENTS

4.2.4.2 As evidenced from Table 4.9 step five was the last step in the case of postgraduate students. As much as 49.19 per cent of the variation in entrepreneurial behaviour was explained by five variables. These were attitude towards competition, self esteem, sociability, innovation proneness and O.G.P.A (work experience). The remaining 13 variables stood out of the regression model revealing their negligible contribution to entrepreneurial behaviour.

The stepwise regression model showing the final step is

$$Y = 65.9415 + -3.2810 X_4 + 0.8478 X_{11} + 0.3674 X_{13} + 0.3803 X_7 + 0.2659 X_{12}$$

The model indicates that a unit change in the variables innovation proneness, sociability, self esteem and attitude towards competition would result in an increase of 0.8478, 0.3674, 0.3803, and 0.2659 units *ceteris paribus* in entrepreneurial behaviour of postgraduate students. However a unit change in O.G.P.A (work experience) would lead to decrease in entrepreneurial behaviour of postgraduate students by 3.2810 units.

In the case of postgraduate students 49.19 per cent of variation in entrepreneurial behaviour was explained by attitude towards competition, self esteem, sociability, innovation proneness and O.G.P.A(work experience). The other thirteen variables stood out of the regression model. Of these five variables, except O.G.P.A in work experience all the other variables were found to have significant relation with entrepreneurial behaviour as evidenced by Table 4.5. This again emphasis the importance of these variables and points to the necessity of strengthening these characteristics of postgraduate students O.G.P.A(work experience) appeared to be an important factor in predicting variation in entrepreneurial behaviour but it was in the negative direction. It indicates that those who are getting higher grade in work experience have lower entrepreneurial behaviour. In the case of correlation analysis also though not significant a negative trend was noticed. The reasons have been discussed section 4.2.3.

<b>Table 4.9 Results of step-wise regression analysis of selected variables with entrepreneurial behaviour of Postgraduate students</b>				
N=100				
Step	Variable entered	Code number of variable	'F' ratio	Percentage of variation explained
1.	Attitude towards competition	X <sub>12</sub>	22.496	18.67
2.	Self esteem	X <sub>7</sub>	20.287	29.49
3.	Sociability	X <sub>13</sub>	25.506	44.35
4.	Innovation proneness	X <sub>11</sub>	20.984	46.91
5.	O.G.P.A (work experience)	X <sub>4</sub>	18.201	49.19



The above discussion brought to light the relative contribution of each factor included in the step wise regression model towards variation in entrepreneurial behaviour. It was also observed that a sizable 49.19 per cent of variation in entrepreneurial behaviour has been explained by five variables included in the final regression model. Hence the hypothesis that there will be no significant contribution for the selected variables in explaining variation in entrepreneurial behaviour of postgraduate students stands rejected.

#### **UNEMPLOYED GRADUATES**

4.2.4.3 In this study as could be noticed from the Table 4.10 only two steps were involved in deriving the regression equation in the case of unemployed graduates. Two variables out of the eighteen included in the model explained 25.15 per cent of the variation in entrepreneurial behaviour. Persuasiveness turned out as the first and most important factor explaining 16.54 per cent of variation in entrepreneurial behaviour by itself. Second important factor identified was innovation proneness, contributing to 8.61 per cent. The remaining 16 variables stood out of the regression model revealing their negligible contribution to entrepreneurial behaviour.

Table 4.10 Results of step-wise regression analysis of selected variables with entrepreneurial behaviour of unemployed graduates				
N=50				
Step	Variable entered	Code number of variable	'F' ratio	Percentage of variation explained
1.	Persuasiveness	X <sub>6</sub>	9.516	16.54
2.	Innovation proneness	X <sub>11</sub>	7.896	25.15

The results implied that only 25.16 per cent of variation in entrepreneurial behaviour was explained by two variables viz. persuasiveness and innovation proneness. As much as 78.84 per cent of variation remains unexplained. This may be because of the non inclusion of some situational variables and psychological variables that were not included. Since 25.15 per cent of variation was explained by two variables the hypothesis that there will be no significant contribution for selected variables in explaining variation in entrepreneurial behaviour of unemployed graduates stands rejected.

The regression model obtained is

$$Y = 34.1175 + 1.3829 X_1 + 3.7559 X_6$$

It is evident from the above equation that a unit change in variables innovation proneness and persuasiveness would result in an increase of 1.3829 and 3.7559 units *ceteris paribus* in entrepreneurial behaviour of unemployed graduates.

## MALE STUDENTS

4.2.4.4 As observed from Table 4.11 step number eight was the last step in the regression analysis in the case of male students. As much as 48.23 per cent variability in entrepreneurial behaviour of male students was explained by eight variables of which sociability turned out to be the first and most important followed by self reliance, persuasiveness, attitude towards self employment, O.G.P.A(work experience) management orientation, innovation proneness and attitude towards competition. Ten variables stood out of the regression model.

<b>Table 4.11 Results of step-wise regression analysis of selected variables with entrepreneurial behaviour of male students</b>				
N=100				
Step	Variable entered	Code number of variable	'F' ratio	Percentage of variation explained
1.	Sociability	X <sub>13</sub>	23.403	19.28
2.	Self reliance	X <sub>9</sub>	19.018	28.17
3.	Persuasiveness	X <sub>6</sub>	16.085	33.45
4.	Attitude towards self employment	X <sub>10</sub>	14.873	38.51
5.	O.G.P.A (work experience)	X <sub>4</sub>	13.69	42.14
6.	Innovation proneness	X <sub>11</sub>	11.50	46.67
7.	Management orientation	X <sub>14</sub>	12.43	44.50
8.	Attitude towards competition	X <sub>12</sub>	10.599	48.23

The data evidenced that 48.23 per cent variability was explained by eight variables of which except O.G.P.A in work experience all the other variables had proved their relationship with entrepreneurial behaviour as evidenced by Table 4.6. This again reinforces the significance of these variables in enhancing entrepreneurial behaviour of male students.

The regression model derived is

$$Y = 102.2756 + 0.2558 X_{12} + 0.7453 X_{11} + -41.4850 X_{14} + -6.2790 X_4 + 1.1048 X_{10} + 1.9452 X_6 + 3.6790 X_9 + 0.5360 X_{13}$$

It is clear from the above equation that a unit change in variables attitude towards competition, innovation proneness, management orientation, attitude towards self employment, persuasiveness, self reliance and sociability would result in an increase of 0.2558, 0.7453, 1.4850, 1.1048, 1.9452, 3.6790 and 0.5360 units *ceteris paribus* in entrepreneurial behaviour of male students. However a unit change in the variables O.G.P.A(work experience) would lead to decrease in entrepreneurial behaviour by 6.2790 units. Since 48.23 per cent of variation in entrepreneurial behaviour

was explained by eight variables the hypothesis that there will be no significant contribution for selected variables in explaining variation in entrepreneurial behaviour of male agricultural students was rejected.

## **FEMALE STUDENTS**

4.2.4.5 The data presented in Table 4.12 evidenced that 36.65 per cent of variability in entrepreneurial behaviour of female students was explained by four variables. These variables were self esteem, sociability, innovation proneness and credit orientation. Fourteen variables stood out of regression equation showing their negligible contribution to variability in entrepreneurial behaviour and 73.35 per cent of variability remained unexplained. The probable reason might be due to some of the socio-psychological variables which were not included in the study.

The best regression equation derived was

$$Y = 47.1553 + 0.6763 X_9 + 0.9619 X_{17} + 0.2915 X_{13} + 0.3405 X_7$$

The model presented above indicates that a unit change in variables self reliance, credit orientation,

sociability and self esteem would result in an increase of 0.6763, 0.9619, 0.2915 and 0.3405 units *ceteris paribus* in entrepreneurial behaviour of female students.

Step	Variable entered	Code number of variable	'F' ratio	Percentage of variation explained
1.	Self esteem	X <sub>7</sub>	28.060	15.94
2.	Sociability	X <sub>13</sub>	31.290	29.86
3.	Innovation proneness	X <sub>11</sub>	26.272	35.06
4.	Credit orientation	X <sub>17</sub>	20.976	36.65

Since 36.65 per cent of variability in entrepreneurial behaviour of female students was explained by four variables the hypothesis that there will be no significant contribution for selected variables in explaining variation in entrepreneurial behaviour of female students stands rejected. All the variables selected in the regression model were found to be significant in correlation analysis also. This emphasise the need to improve these traits of the agricultural students to increase their entrepreneurial behaviour.

#### **4.2.5 Direct and indirect effects of selected personal, psychological economic and technological, characteristics in explaining the variance in entrepreneurial behaviour of agricultural students**

The coefficient of correlation established the nature and degree of influence of each independent variable on the dependent variable in predicting the variability in the dependent variable as well as their joint influence. But both the procedures fail to explain the direct and indirect effects of the independent variables on the dependent one. Hence multivariate path analysis was carried out in the present study to explain the direct and indirect effect of selected independent variables on entrepreneurial behaviour of agricultural students.

### **UNDERGRADUATE STUDENTS**

4.2.5.1 It was revealed from the results presented in Table 4.13 that marks obtained in B.Sc. had the maximum direct effect on entrepreneurial behaviour in the case of undergraduates. Marks obtained in the pre-degree stood second but in negative direction followed by management orientation, sociability, credit orientation, innovation proneness, self confidence, self esteem, economic motivation, self reliance, attitude towards competition, attitude towards self employment, overall grade point

average and annual income in that order. The remaining variables such as thoughtfulness, persuasiveness, technical competency and O.G.P.A (work experience) had shown very small direct effect (Table 4.13).

Table No 4.13 Results of path coefficient analysis of selected variables with entrepreneurial behaviour of undergraduate students N=100							
Code	Variable	Direct effect	Rank	Indirect effect	Rank	Largest indirect effect	Through variable number
X <sub>1</sub>	Marks obtained in Pre-degree	-0.2623	II	0.2555	I	0.2288	X <sub>2</sub>
X <sub>2</sub>	Marks obtained in B.Sc.	0.3287	I	-0.1591	VIII	-0.1824	X <sub>1</sub>
X <sub>3</sub>	Overall Grade Point Average	0.0583	XIII	0.0873	XI	0.3152	X <sub>2</sub>
X <sub>4</sub>	Overall Grade Point Average for work experience	0.0003	XVIII	0.002	XVIII	0.1083	X <sub>2</sub>
X <sub>5</sub>	Self confidence	0.1595	VII	0.1392	X	0.0791	X <sub>11</sub>
X <sub>6</sub>	Persuasiveness	0.0197	XVI	0.2539	II	0.0879	X <sub>7</sub>
X <sub>7</sub>	Self esteem	0.1594	VIII	0.2127	III	0.0820	X <sub>2</sub>
X <sub>8</sub>	Thoughtfulness	-0.0477	XV	0.069	XII	0.0270	X <sub>7</sub>
X <sub>9</sub>	Self reliance	0.1008	X	0.1672	VI	0.0435	X <sub>13</sub>
X <sub>10</sub>	Attitude towards Self employment	0.0595	XII	0.0584	XV	0.336	X <sub>2</sub>
X <sub>11</sub>	Innovation proneness	0.1621	VI	0.1518	IX	0.706	X <sub>7</sub>
X <sub>12</sub>	Attitude towards competition	0.0996	XI	0.1982	IV	0.0620	X <sub>13</sub>
X <sub>13</sub>	Sociability	0.1818	IV	0.1646	VII	0.0575	X <sub>7</sub>
X <sub>14</sub>	Management orientation	0.2100	III	0.0653	XIV	0.0697	X <sub>2</sub>
X <sub>15</sub>	Economic Motivation	0.1413	IX	-0.0658	XIII	-0.0421	X <sub>14</sub>
X <sub>16</sub>	Annual income	-0.0560	XIV	0.1763	V	-0.0536	X <sub>1</sub>
X <sub>17</sub>	Credit orientation	0.1645	V	-0.0129	XVII	-0.0543	X <sub>2</sub>
X <sub>18</sub>	Technical competency	0.0006	XVII	0.0194	XVI	0.0645	X <sub>2</sub>



The variable marks obtained in pre-degree ( $X_1$ ) which stood second in total direct effect was ranked first in indirect effect but it was in positive direction whereas the direct effect was negative. Variables like O.G.P.A, O.G.P.A (work experience), technical competency and attitude towards self employment were ranked almost similar in both direct and indirect effect.

Variables like persuasiveness, annual income, self confidence and attitude towards competition showed much variation in the ranks obtained for direct and indirect effects.

In the case of total indirect effect persuasiveness, self esteem and attitude towards competition obtained the second, third and fourth ranks.

Further the data in terms of largest indirect effect of variables on entrepreneurial behaviour revealed that marks obtained in pre-degree, O.G.P.A, O.G.P.A(work experience), self esteem, management orientation, credit orientation, technical competency and attitude towards self employment exerted the largest indirect influence through variable marks obtained in B.Sc. ( $X_2$ ) of which indirect effect of credit orientation was negative.



Four of the variables exerted their largest indirect effect through self esteem ( $X_8$ ) which were all positive. It was also noticed that out of the total indirect effect of marks obtained in the degree (0.2555) almost 89.9 per cent (0.2288) was through marks obtained in B.Sc. Similarly marks obtained in B.Sc. also exercised its largest indirect effect through O.G.P.A (0.3152). This was found to be even more than the total indirect effect.

As evidenced from the Table 4.13 marks obtained in B.Sc. had the maximum direct effect on entrepreneurial behaviour in the case of undergraduates. In spite of its highest direct effect it appeared non significant in correlation analysis, because of the considerable negative effect it exerted on entrepreneurial behaviour indirectly through other factors. Second largest direct effect was shown by marks obtained in pre-degree but the influence was in the negative direction. Interestingly the indirect effect it exerted was almost equal but in the positive direction, thus making it non significant in correlation. Management orientation appeared third in direct effect. The direct effect of sociability, credit orientation, innovation proneness, self confidence, self esteem, economic motivation and self reliance were found to be above 0.1. For the remaining variables direct effect was found negligible. Though the direct effects of credit orientation and economic motivation were high both had

negative indirect effect making it non-significant in the relationship with entrepreneurial behaviour.

Persuasiveness which appeared significant in correlation analysis (Table 4.9) was found very low in its direct effect. It was the total indirect effect that made the correlation value significant. Persuasiveness, attitude towards competition, annual income, self reliance, sociability, innovation proneness and self confidence were found to have relatively high total indirect effect which were positive.

Table 4.13 further provides information regarding largest indirect effect exercised by each variable through the other. It could be noticed that marks obtained in pre-degree course exercised its largest indirect effect on entrepreneurial behaviour through marks obtained in B.Sc. This may be due to the fact both indicate the academic achievement of a student. Similarly marks obtained in B.Sc. also exercised its largest indirect effect through O.G.P.A which is natural as the marks obtained in B.Sc. is an index of the O.G.P.A a student gets in this case.

Marks obtained in B.Sc. turned out to be the most important variable through which marks obtained in Pre-degree, O.G.P.A, O.G.P.A (work experience), self esteem, management orientation, credit orientation, technical

competency and attitude towards self employment exerted the largest indirect effect on entrepreneurial behaviour. Persuasiveness, sociability, thoughtfulness and innovation proneness exerted their largest indirect effect through self esteem which suggest the need for improving credit orientation, persuasiveness, innovation proneness, self reliance, management orientation, O.G.P.A(work experience), marks in B.Sc., technical competency and attitude towards competition of undergraduate students thereby enhancing their level of entrepreneurial behaviour.

## **POSTGRADUATE STUDENTS**

4.2.5.2 The results presented in Table 4.14 reveal that self esteem had the maximum direct effect on entrepreneurial behaviour in the case of postgraduates. Sociability stood second followed by innovation proneness, management orientation and O.G.P.A (work experience) of which O.G.P.A (work experience) the effect was negative.

Attitude towards self employment and attitude towards competition obtained the VI<sup>th</sup> and VII<sup>th</sup> rank. The other variables such as marks obtained in pre-degree, marks obtained in B.Sc., annual income, self confidence,

persuasiveness, thoughtfulness and economic motivation showed very small direct effect.

Table No 4.14 Results of path coefficient analysis of selected variables with entrepreneurial behaviour of post graduate students							
N=100							
Code	Variable	Direct effect	Rank	Indirect effect	Rank	Largest indirect effect	Through variable number
X <sub>1</sub>	Marks obtained in Pre-degree	-0.0109	XVI	0.1071	XII	0.0650	X <sub>13</sub>
X <sub>2</sub>	Marks obtained in B.Sc.	-0.0319	XII	-0.0253	XVII	-0.0716	X <sub>4</sub>
X <sub>3</sub>	Overall Grade Point Average	-0.0944	VII	-0.0244	XVIII	-0.0388	X <sub>7</sub>
X <sub>4</sub>	Overall Grade Point Average for work experience	-0.1505	V	0.0569	XV	0.0357	X <sub>13</sub>
X <sub>5</sub>	Self confidence	-0.0252	XIII	0.2449	III	0.3714	X <sub>7</sub>
X <sub>6</sub>	Persuasiveness	-0.0019	XVII	0.2459	II	0.3407	X <sub>13</sub>
X <sub>7</sub>	Self esteem	0.5670	I	-0.1549	VIII	-0.1812	X <sub>13</sub>
X <sub>8</sub>	Thoughtfulness	-0.0009	XVIII	0.1278	XI	0.0951	X <sub>7</sub>
X <sub>9</sub>	Self reliance	0.0488	X	0.1767	V	0.1782	X <sub>13</sub>
X <sub>10</sub>	Attitude towards Self employment	0.1376	VI	0.0718	XIV	0.1407	X <sub>7</sub>
X <sub>11</sub>	Innovation proneness	0.1901	III	0.1803	IV	0.0789	X <sub>13</sub>
X <sub>12</sub>	Attitude towards competition	0.1317	VII	0.3004	I	0.1187	X <sub>7</sub>
X <sub>13</sub>	Sociability	0.4052	II	-0.1632	VII	-0.02536	X <sub>7</sub>
X <sub>14</sub>	Management orientation	0.1629	IV	0.1413	X	0.0844	X <sub>7</sub>
X <sub>15</sub>	Economic Motivation	-0.0249	XIV	0.1662	VI	0.1545	X <sub>7</sub>
X <sub>16</sub>	Annual income	0.0159	XV	0.1449	XI	0.0645	X <sub>13</sub>
X <sub>17</sub>	Credit orientation	0.0918	XI	-0.0514	XVI	-0.2111	X <sub>7</sub>
X <sub>18</sub>	Technical competency	0.0460	XI	0.1110	XII	0.0759	X <sub>7</sub>

As to the indirect effect the attitude towards competition was ranked first followed by persuasiveness, self confidence, innovation proneness and self reliance.

Variable innovation proneness obtained almost similar ranks for both direct and indirect effect. Ten of the variables exerted their largest direct effect through self esteem of which three of the values were in the negative direction, thus reducing the contribution of these variables to entrepreneurial behaviour. It was also noticed that out of the total indirect effect of self confidence (0.2449) 0.3714 was through self esteem. Similarly in the case of persuasiveness it exercised its largest indirect effect through sociability.

As mentioned earlier self esteem was having largest direct effect in the case of postgraduate students. Though its indirect effect was negative due to its high value for direct effect it was found to be significant in correlation analysis also. Second largest effect was shown by sociability followed by innovation proneness, management orientation, O.G.P.A (work experience). Of these O.G.P.A (work experience) had negative direct effect whereas its indirect effect was positive thus reducing its contribution and hence non significant result was obtained in correlation analysis. Attitude towards self employment and attitude towards competition were ranked V<sup>th</sup> and VI<sup>th</sup> were found to have

positive indirect effect too thus making them significant in correlation analysis.

Attitude towards competition had highest rank in indirect effect in the positive direction and its direct effect also was high. It was found to be significant in correlation analysis also.

O.G.P.A (work experience) and annual income were ranked 3<sup>rd</sup> and 2<sup>nd</sup> in total indirect effect but their effect was found in inverse direction probably this may be the reason for them not finding a significant place in correlation analysis.

It could be observed from the Table 4.14 that out of the total indirect effect of self confidence (0.2449) 0.3714 was through self esteem. This may be because high self confidence makes one to have better self esteem. Another observation was that marks obtained in pre-degree, O.G.P.A (work experience), annual income, persuasiveness, management orientation and innovation proneness exerted their largest indirect effect through sociability. These findings suggest the need for improving sociability, self esteem, innovation proneness, management orientation and attitude towards self employment of agricultural postgraduate students.

## UNEMPLOYED GRADUATES

4.2.5.3 The data in Table 4.15 revealed that credit orientation had maximum direct effect on entrepreneurial behaviour in the case of unemployed graduates but its indirect effect was negative, thus reducing its contribution. Persuasiveness stood second followed by innovation proneness, self reliance and O.G.P.A. (Work experience). Marks in B.Sc., management orientation, technical competency, attitude towards competition and marks in pre degree were ranked 6,7,8,9 and 10 respectively. The direct effects in the case of O.G.P.A (work experience) and marks in pre-degree were in the negative direction.

Coming to the total indirect effect marks obtained in B.Sc. was ranked first but in the negative direction thus reducing its contribution, the direct effect being positive. This was followed by sociability, self confidence, management orientation, O.G.P.A. and marks obtained in pre-degree. In the case of O.G.P.A the direct and indirect effects were in the opposite direction thus reducing its influence.

Credit orientation, technical competency, self reliance, innovation proneness and attitude towards



competition were ranked far less in their indirect effect when compared to their direct effect on entrepreneurial behaviour.

Table No 4.15 Results of path coefficient analysis of selected variables with entrepreneurial behaviour of unemployed graduate

N=50

Code	Variable	Direct effect	Rank	Indirect effect	Rank	Largest indirect effect	Through variable number
X <sub>1</sub>	Marks obtained In Pre-degree	-0.0969	X	-0.1536	VI	-0.0816	X <sub>11</sub>
X <sub>2</sub>	Marks obtained in B.Sc.	0.1752	VI	-0.3841	I	-0.0703	X <sub>4</sub>
X <sub>3</sub>	Overall Grade Point Average	0.0848	XI	-0.2071	V	-0.0859	X <sub>6</sub>
X <sub>4</sub>	Overall Grade Point Average for work experience	-0.1790	V	0.0822	XIII	0.0688	X <sub>2</sub>
X <sub>5</sub>	Self confidence	0.0615	XIII	0.2579	III	0.09331	X <sub>11</sub>
X <sub>6</sub>	Persuasiveness	0.3086	II	0.0981	X	-0.0511	X <sub>2</sub>
X <sub>7</sub>	Self esteem	0.0370	XVI	0.1418	VIII	0.0510	X <sub>11</sub>
X <sub>8</sub>	Thoughtfulness	0.0501	XIV	0.1176	IX	0.0829	X <sub>11</sub>
X <sub>9</sub>	Self reliance	0.2039	IV	0.0117	XVIII	-0.0432	X <sub>2</sub>
X <sub>10</sub>	Attitude towards Self employment	0.0430	XV	0.1460	VII	0.1099	X <sub>3</sub>
X <sub>11</sub>	Innovation proneness	0.2944	III	0.0644	XIV	0.0530	X <sub>6</sub>
X <sub>12</sub>	Attitude towards competition	0.1339	IX	-0.0489	XVI	0.0530	X <sub>6</sub>
X <sub>13</sub>	Sociability	-0.0267	XVIII	0.2764	II	0.1278	X <sub>6</sub>
X <sub>14</sub>	Management orientation	0.1600	VII	0.2084	IV	0.0748	X <sub>6</sub>
X <sub>15</sub>	Economic Motivation	0.0284	XVII	0.0844	XII	0.0905	X <sub>11</sub>
X <sub>16</sub>	Annual income	0.0805	XII	0.0869	II	-0.0582	X <sub>6</sub>
X <sub>17</sub>	Credit orientation	0.3101	I	-0.0235	XVII	0.0481	X <sub>11</sub>
X <sub>18</sub>	Technical competency	0.1531	VIII	0.0573	XV	0.0517	X <sub>9</sub>

The data in terms of largest indirect effect of variables on entrepreneurial behaviour revealed that O.G.P.A, annual income, sociability, management orientation and innovation proneness exerted the largest indirect influence through variable persuasiveness. Six of the variables exerted their largest indirect effect through innovation proneness.

The data revealed that credit orientation had maximum direct effect but it's indirect effect was negative thus reducing its contribution. Second largest direct effect was shown by persuasiveness, followed by innovation proneness, self reliance, management orientation, O.G.P.A (work experience), marks in B.Sc., technical competency and attitude towards competition in that order. Self reliance and management orientation though had 4<sup>th</sup> and 5<sup>th</sup> ranks for direct effect, their indirect effects were in the opposite direction, which probably might have reduced their contribution as evidenced by the correlation results. Similar was the case of marks in B.Sc., and O.G.P.A. The direct effect in the case of technical competency was ranked 8<sup>th</sup> and attitude towards competition was ranked 9<sup>th</sup> but both were not significant in correlation analysis. The indirect effect in the case of attitude towards competition on entrepreneurial behaviour was negative. All the variable which appeared significant in correlation analysis were found to be high in its direct effect except in the case of self confidence. Here the

effect was positive both in the case of direct and indirect effect thus making it significant in correlation analysis.

It could be noticed from the Table (4.15) that largest indirect effect of variables on entrepreneurial behaviour in the case of O.G.P.A, annual income, sociability, management orientation and innovation proneness was through persuasiveness. Self confidence, self esteem, thoughtfulness and economic motivation exerted their largest indirect effect through innovation proneness. These findings suggests the need for improving credit orientation, persuasiveness, self confidence, <sup>and</sup> innovation proneness of unemployed graduates.

## **MALE STUDENTS**

4.2.5.4 The data in Table 4.16 reveal that the ranks of variables with respect to the direct and total indirect effect were the same in the case of male students. Here interestingly the variable O.G.P.A which stood first in total direct effect was ranked first in indirect effect. Similarly O.G.P.A (work experience) which was ranked second in direct effect was ranked 2nd in indirect effect and its influence was in opposite direction. Further data in terms of largest indirect effect of variables on

entrepreneurial behaviour of male students revealed that marks in pre-degree, marks in B.Sc., annual income, persuasiveness, sociability, ~~management~~ orientation, economic motivation and credit orientation exerted the largest indirect influence through the variable O.G.P.A. Six of the variables exerted their largest indirect effect through (X<sub>2</sub>) marks in B.Sc. but three of the values were in the negative direction thus reducing the contribution of these variables on entrepreneurial behaviour.

As mentioned above O.G.P.A had the maximum direct effect in the case of male students. In spite of its highest direct effect in negative direction it appeared non significant in correlation analysis because of the considerable positive effect it exerted on entrepreneurial behaviour indirectly through other variables. Second largest direct effect was shown by O.G.P.A (work experience) but the influence was in the negative direction. Interestingly the indirect effect it exerted was almost equal but in the positive direction thus making it non significant. Similar was the case of marks obtained in B.Sc. Management Orientation stood fourth in direct effect in the positive direction. Though its indirect effect was negative it was lesser than the direct effect thus making it significant in correlation analysis. The direct effect of annual income, marks in pre degree, thoughtfulness, attitude towards competition, persuasiveness, economic motivation, technical competence, self reliance and

self esteem were found to be above 100. For the remaining variables direct effect was found to be negligible.

Code	Variable	Direct effect	Rank	Indirect effect	Rank	Largest indirect effect	Through variable number
X <sub>1</sub>	Marks obtained in Pre-degree	539.7884	VI	-539.8957	VI	-1162.18	X <sub>3</sub>
X <sub>2</sub>	Marks obtained in B.Sc.	1716.2250	III	-1716.3866	III	-1420.22	X <sub>3</sub>
X <sub>3</sub>	Overall Grade Point Average	- 2595.8980	I	2592.748	I	938.95	X <sub>2</sub>
X <sub>4</sub>	Overall Grade Point Average for work experience	-1811.056	II	1810.909	II	569.27	X <sub>2</sub>
X <sub>5</sub>	Self confidence	-49.5012	XV	49.8034	XV	-394.22	X <sub>2</sub>
X <sub>6</sub>	Persuasiveness	-259.9385	IX	260.3456	IX	226.36	X <sub>3</sub>
X <sub>7</sub>	Self esteem	-111.5155	XIII	111.8951	XIII	217.32	X <sub>4</sub>
X <sub>8</sub>	Thoughtfulness	-423.2013	VII	423.2815	VII	156.52	X <sub>3</sub>
X <sub>9</sub>	Self reliance	150.5956	XII	-150.2029	XII	155.21	X <sub>4</sub>
X <sub>10</sub>	Attitude towards Self employment	-37.6483	XVI	37.9957	XVI	144.33	X <sub>2</sub>
X <sub>11</sub>	Innovation proneness	26.5605	XVIII	-26.1839	XVIII	-437.98	X <sub>2</sub>
X <sub>12</sub>	Attitude towards competition	267.7025	VIII	-267.3164	VIII	-176.26	X <sub>2</sub>
X <sub>13</sub>	Sociability	53.3545	XIV	52.1954	XIV	329.42	X <sub>3</sub>
X <sub>14</sub>	Management orientation	685.4851	IV	-685.1175	IV	-451.43	X <sub>3</sub>
X <sub>15</sub>	Economic Motivation	-229.1808	X	229.3314	X	268.42	X <sub>3</sub>
X <sub>16</sub>	Annual income	620.0888	V	-620.0488	V	-449.87	X <sub>3</sub>
X <sub>17</sub>	Credit orientation	30.7934	XVII	-30.6628	XVII	510.61	X <sub>3</sub>
X <sub>18</sub>	Technical competency	-210.9415	XI	211.1616	XI	368.01	X <sub>4</sub>

In the case of innovation proneness though the direct effect was low and the indirect effect was negative the cumulative effect was high making it significant in correlation analysis. Interestingly the indirect effect of attitude towards self employment was positive though its direct effect was negative. The indirect effect was high which made it significant in correlation analysis.

## **FEMALE STUDENTS**

4.2.5.5 It was revealed from the results presented in Table 4.17 that self esteem had the maximum direct effect on entrepreneurial behaviour in the case of female students. Persuasiveness stood 2<sup>nd</sup> followed by sociability, innovation proneness, credit orientation, self reliance, management orientation, economic motivation, thoughtfulness, attitude towards competition and marks in B.Sc. The remaining variables such as self confidence, O.G.P.A (work experience), technical competency, O.G.P.A, attitude towards self employment and annual income had shown very small direct effect.

The data in Table 4.17 also revealed that the variable which got 2<sup>nd</sup> and 3<sup>rd</sup> rank in direct effect ( $X_6$  and  $X_{13}$ ) obtained 3<sup>rd</sup> and 1<sup>st</sup> rank for indirect effect. But the

Table No 4.17 Results of path coefficient analysis of selected variables with entrepreneurial behaviour of female students

N=150							
Code	Variable	Direct effect	Rank	Indirect effect	Rank	Largest indirect effect	Through variable number
X <sub>1</sub>	Marks obtained in Pre-degree	-0.0318	XV	0.1002	XI	-0.0439	X <sub>7</sub>
X <sub>2</sub>	Marks obtained in B.Sc.	0.0792	XI	0.0228	XVI	0.0548	X <sub>7</sub>
X <sub>3</sub>	Overall Grade Point Average	0.0146	XVI	0.1247	X	0.0622	X <sub>7</sub>
X <sub>4</sub>	Overall Grade Point Average for work experience	-0.0632	XIII	0.0445	XV	0.0374	X <sub>2</sub>
X <sub>5</sub>	Self confidence	-0.0721	XII	0.3392	II	-0.0999	X <sub>6</sub>
X <sub>6</sub>	Persuasiveness	0.4231	II	-0.2163	III	0.0505	X <sub>17</sub>
X <sub>7</sub>	Self esteem	0.5210	I	-0.1218	XI	-0.0905	X <sub>6</sub>
X <sub>8</sub>	Thoughtfulness	0.1032	IX	0.0170	XVIII	0.3436	X <sub>6</sub>
X <sub>9</sub>	Self reliance	0.1253	VI	0.0509	XIII	0.1207	X <sub>6</sub>
X <sub>10</sub>	Attitude towards Self employment	-0.0160	XVII	0.1846	V	0.1280	X <sub>7</sub>
X <sub>11</sub>	Innovation proneness	0.2285	IV	0.1645	VII	0.0734	X <sub>6</sub>
X <sub>12</sub>	Attitude towards competition	-0.0874	X	0.1638	VIII	0.0829	X <sub>7</sub>
X <sub>13</sub>	Sociability	-0.311	III	0.5187	I	0.3436	X <sub>6</sub>
X <sub>14</sub>	Management orientation	0.1245	VII	0.1416	IX	-0.0237	X <sub>17</sub>
X <sub>15</sub>	Economic Motivation	0.1136	VIII	-0.0218	XVII	-0.0389	X <sub>6</sub>
X <sub>16</sub>	Annual income	-0.0051	XVIII	0.1854	IV	0.0659	X <sub>6</sub>
X <sub>17</sub>	Credit orientation	0.2276	V	-0.1656	VI	-0.1568	X <sub>7</sub>
X <sub>18</sub>	Technical competency	0.0414	XIV	0.0485	XIV	0.0235	X <sub>9</sub>

variable self esteem which obtained highest direct effect got only 11<sup>th</sup> rank in indirect influence and that too in negative direction. Variables such as O.G.P.A (work experience) credit orientation, and technical competency obtained similar ranks in both case.

The results in terms of largest indirect effect of variables on entrepreneurial behaviour revealed that marks in pre-degree, marks in B.Sc., O.G.P.A, thoughtfulness, credit orientation, attitude towards self employment and attitude towards competition exerted the largest indirect influence through the variable self esteem.

Variables annual income, self confidence, self esteem, sociability, self reliance and innovation proneness exerted their influence through persuasiveness. It was also noticed that out of the total indirect effect of sociability (0.518 ) 66.62 per cent (0.3436) was through persuasiveness.

As evidenced from above results self esteem had the maximum direct effect on entrepreneurial behaviour of female students. Though the indirect effect of self esteem on entrepreneurial behaviour was negative, because of the very high value of direct effect, the total effect was high and hence its significant relation as evidenced by the correlation results (Table 4.6). Persuasiveness, sociability, innovation



proneness, credit orientation, self reliance, management orientation. economic motivation, thoughtfulness and attitude towards competition were ranked 2 to 10 of these persuasiveness, sociability, management orientation, innovation proneness and self reliance were found to have significant values in correlation analysis also. Credit orientation and economic motivation though obtained high ranks in direct effects their indirect effects reduced their contribution.

In the case of attitude towards competition though the direct effect was low, the high indirect effect made its contribution more and hence significant relation was obtained in correlation analysis.

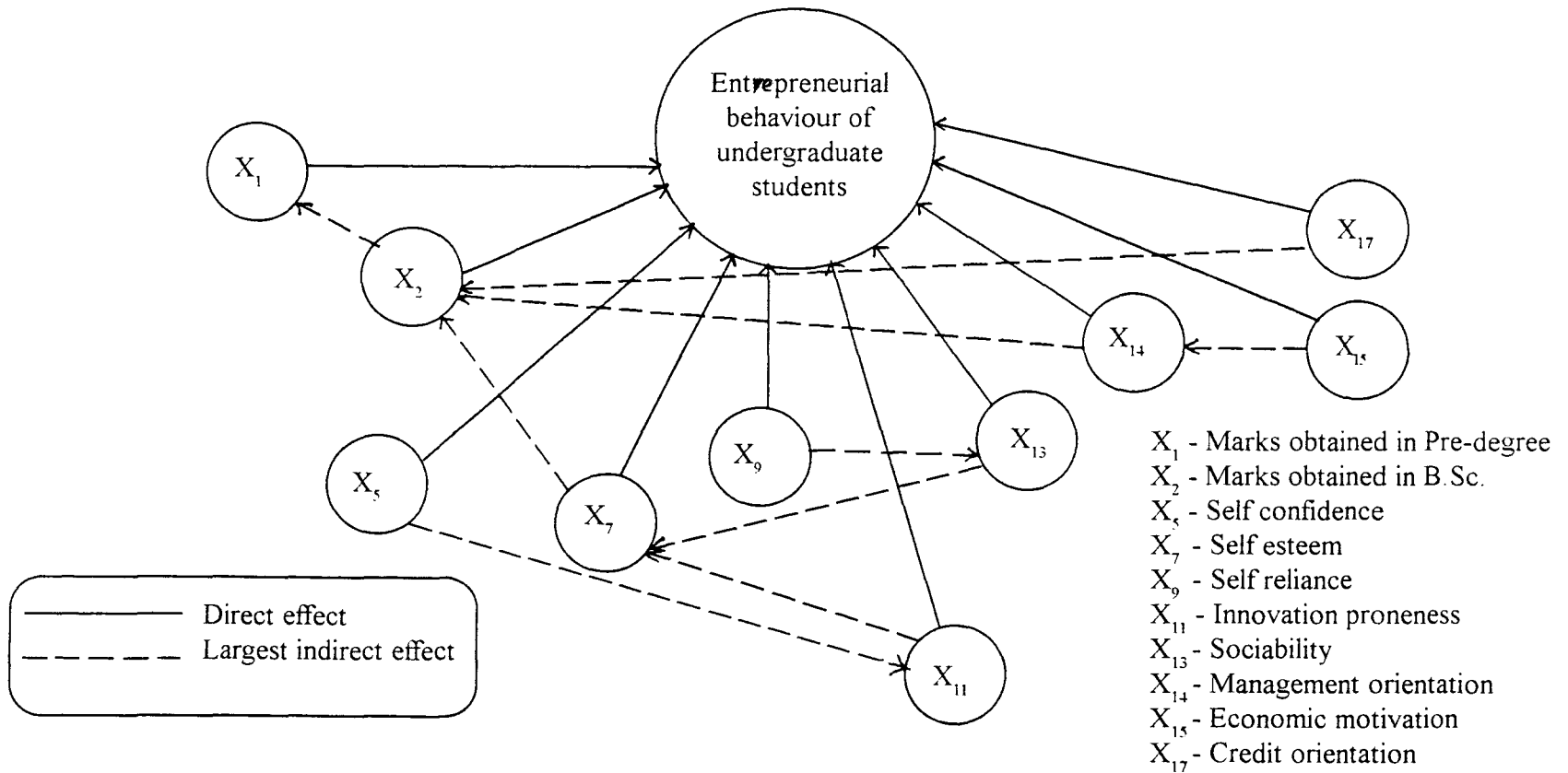
Table 4.17 further provides information regarding largest indirect effect exercised by each variable through the other. Marks in pre degree, marks in B.Sc., O.G.P.A, thoughtfulness, credit orientation, attitude towards self employment and attitude towards competition exerted the largest indirect influence through the variable self esteem thus reaffirming the significance of the variable self esteem. Among the socio-psychological variables annual income, self confidence, self esteem, sociability, self reliance and innovation proneness exerted their indirect influence through persuasiveness. These findings suggest the need for improving self esteem, persuasiveness, sociability, innovation proneness,

credit orientation, self reliance, management orientation, and economic motivation of female agricultural students.

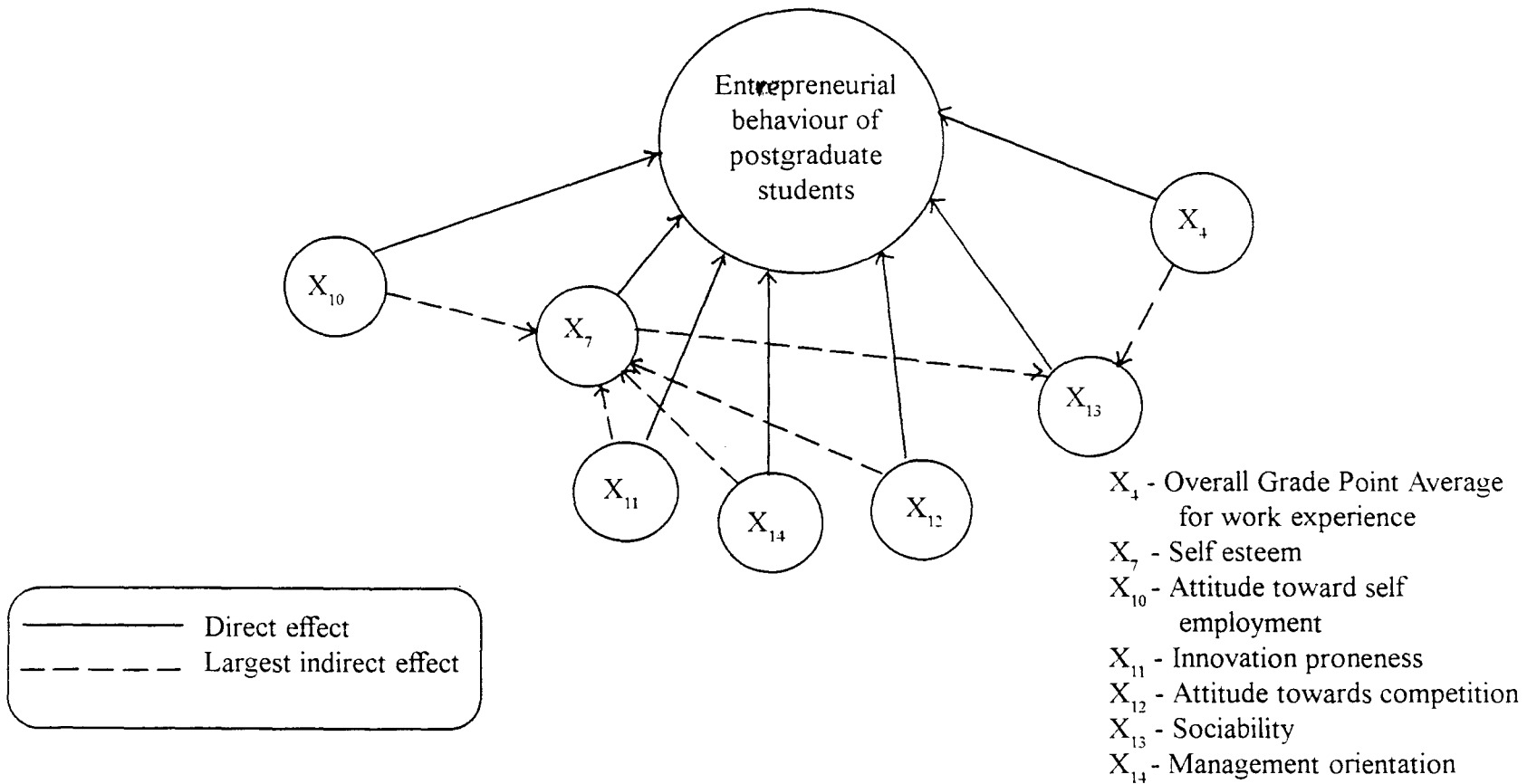
It is worthwhile to identify some dominant or focus variables among the 18 variables which had the direct as well as indirect effects on entrepreneurial behaviour of agricultural students to know the variables which are most important in influencing entrepreneurial behaviour. Here the dominant variables - which had the largest effect on entrepreneurial behaviour of agricultural students were identified as those variables that got path coefficient value of 0.1 and above in all categories except that male agricultural students where the criterion fixed was path coefficient of 100 and above.

Accordingly ten variables were identified as the dominant/ focus variables that have largest direct effect on entrepreneurial behaviour of undergraduate as shown in fig.3. Then the largest indirect effect on entrepreneurial behaviour of undergraduate students was traced with first and largest indirect effects based on the path values obtained by each of the variables.

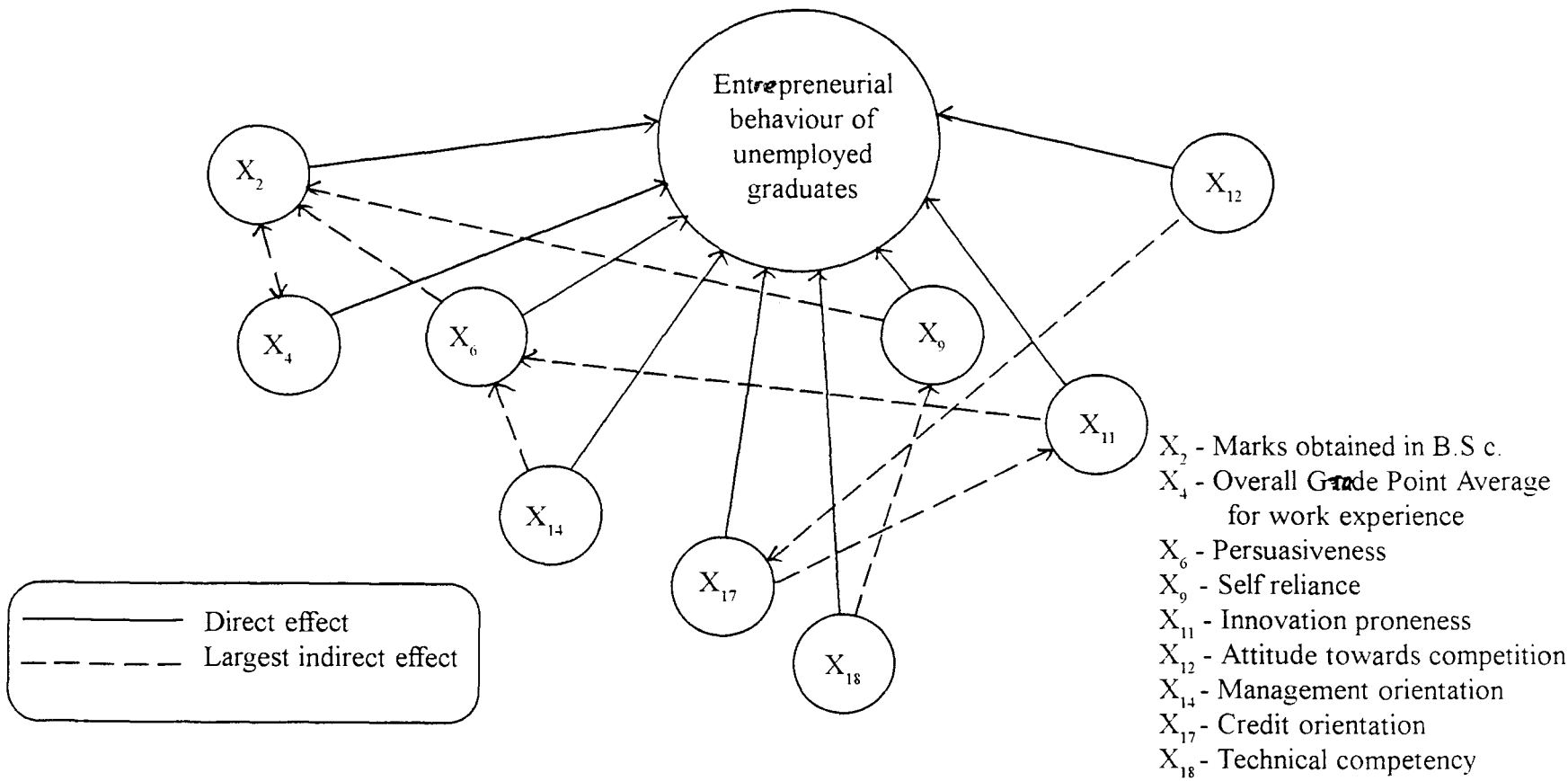
As to the postgraduate students seven variables were identified as the dominant/ focus variables that have largest direct effect on entrepreneurial behaviour as shown in



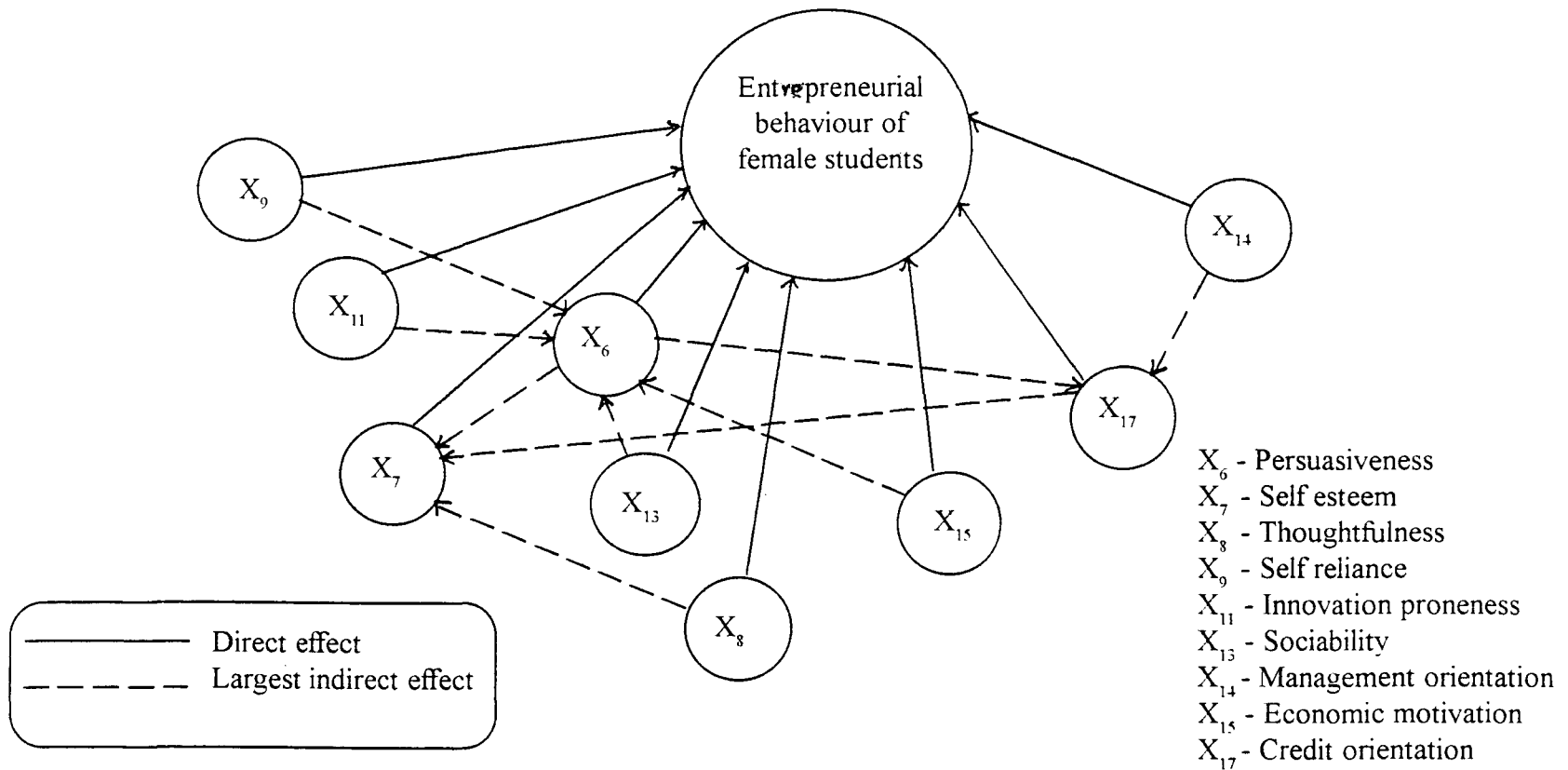
**Fig 3 Path diagram showing major direct effects and the largest indirect effect of selected variables on entrepreneurial behaviour of undergraduate students**



**Fig 4 Path diagram showing major direct effects and the largest indirect effect of selected variables on entrepreneurial behaviour of postgraduate students**



**Fig 5 Path diagram showing major direct effects and the largest indirect effect of selected variables on entrepreneurial behaviour of unemployed graduates**



**Fig 7 Path diagram showing major direct effects and the largest indirect effect of selected variables on entrepreneurial behaviour of female students**

fig.4. The largest indirect effect on entrepreneurial behaviour of postgraduate students was traced with first largest indirect effect based on the path value obtained by each of the variables.

In the case of unemployed graduates nine variables were identified as the dominant variables that have largest direct effect on entrepreneurial behaviour as show in fig.5. The largest indirect effect on entrepreneurial behaviour of unemployed graduates was traced with first largest indirect effect based on path values obtained by each of the variables.

With respect to the male students 13 variables were identified as the dominant/ focus variables that have largest direct effect on entrepreneurial behaviour as shown in fig.6. The largest indirect effect on entrepreneurial behaviour of male students was traced with first largest indirect effect based on path values obtained by each of the variables.

In the case of female students nine variables were identified as the dominant focus variables that have largest direct effect on entrepreneurial behaviour as shown in fig.7. The largest indirect effect on entrepreneurial behaviour of female students was traced with first largest indirect effect based on path values obtained by each of the variables.

### ***4.3 Identification of factors influencing entrepreneurial behaviour of agricultural students as perceived by them.***

In the present study the factors influencing entrepreneurial behaviour as perceived by the respondents are presented in Tables 4.18, 4.19, 4.20, 4.21 and Table 4.22.

#### **4.3.1 Factors influencing entrepreneurial behaviour as perceived by undergraduate students**

The results presented in Table 4.18 reveal that factors such as availability of resource, capital investment and formalities for starting an enterprise were ranked 1,2,3 with scores 624, 611 and 547 respectively followed by availability of labour and environment for enterprise, infrastructural facilities, economic incentives, employment stress and technological availability with scores of 531, 522, 506, 470, 464 and 455. Marketability of commodity and marketability of enterprise scored least ranks with scores 406, 363 respectively.

The results revealed that the undergraduate students perceived availability of resources as the first important factor which influence entrepreneurial behaviour followed by capital investment and formalities for starting an



Table 4.18 Ranking of factors influencing entrepreneurial behaviour of agricultural students as perceived by undergraduate students N=100

SINo	Factor	Rank Score											Total	Rank
		1	2	3	4	5	6	7	8	9	10	11		
1	Economic Incentives	6	5	5	8	7	18	3	30	17	1	0	470	VII
2	Employment stress	17	2	3	6	7	5	7	22	20	9	2	464	VIII
3	Marketability of enterprise	2	4	7	8	11	4	3	14	18	19	10	363	XI
4	Marketability of commodity	7	4	3	9	15	8	5	8	11	17	13	406	X
5	Technological availability	9	4	10	10	11	7	8	4	11	12	14	455	IX
6	Environment for enterprise	4	3	15	18	18	8	7	5	3	12	7	522	V
7	Formalities for starting an enterprise	6	14	13	19	9	7	5	2	1	7	17	547	III
8	Capital investment	13	7	22	15	9	6	7	5	3	4	9	611	II
9	Availability of resource	14	23	9	7	7	13	4	6	4	7	6	624	I
10	Availability of labour	13	16	6	2	2	14	22	3	4	8	10	531	IV
11	Infrastructural facility	9	17	7	3	2	6	30	1	7	7	11	506	VI

enterprise and availability of labour. The main motive of any entrepreneur is to maximise profit. This depends on availability of resources and availability of labour. Moreover the hurdles one has to overcome for getting sanction from Government to launch an enterprise also influence the starting of any enterprise. This may be the reason for the above mentioned priorities. Marketability of commodity and marketability of enterprise were perceived as least important influencing factors by the undergraduates.

#### **4.3.2 Factors influencing entrepreneurial behaviour as perceived by postgraduate students.**

From the data presented in Table 4.19, it was observed that, capital investment, infrastructural facilities and availability of resources were ranked 1,2,3, with corresponding scores 576, 570 and 561 by the postgraduates. The fourth important factor was economic incentives with a score of 505. Availability of labour, employment stress, marketability of commodity, formalities for starting an enterprise environment for enterprise, marketability of enterprise and technological availability were ranked 5 to 11 in descending order with scores 502, 498, 479, 460, 453, 418 and 398 respectively.

Table 4.19 Ranking of factors influencing entrepreneurial behaviour of agricultural students as perceived by postgraduate students  
N=100

SlNo	Factor	Rank Score											Total	Rank
		1	2	3	4	5	6	7	8	9	10	11		
1	Economic Incentives	14	8	5	6	4	6	4	37	15	0	1	505	IV
2	Employment stress	18	2	3	10	8	10	3	16	22	4	4	498	VI
3	Marketability of enterprise	5	1	15	7	9	8	2	14	15	16	8	418	X
4	Marketability of commodity	7	7	6	15	16	7	4	4	13	8	13	479	VII
5	Technological availability	6	3	9	8	9	11	6	5	7	15	21	392	XI
6	Environment for enterprise	3	5	13	10	16	7	7	5	7	16	11	453	IX
7	Formalities for starting an enterprise	10	5	13	17	8	12	6	11	5	7	6	460	VIII
8	Capital investment	14	9	10	9	18	4	15	3	3	9	6	576	II
9	Availability of resource	9	20	11	6	5	11	9	3	9	13	4	561	III
10	Availability of labour	8	14	5	9	4	18	16	0	2	11	13	502	V
11	Infrastructural facility	6	26	10	3	3	6	28	2	2	5	9	570	II

From Table 4.19 it could be inferred that capital investment infrastructural facilities and availability of resource were ranked 1,2,3. The postgraduates also perceived capital and resource as most important for starting an enterprise. The respondents are aware of the fact that the more one invests on an enterprise the more the income one derive provided there is proper management. Postgraduates perceived technological availability as least important in influencing the entrepreneurial behaviour.

#### **4.3.3 Factors influencing entrepreneurial behaviour as perceived by unemployed graduates.**

It was revealed from the Table 4.20 that in the case of unemployed graduates availability of labour was ranked as the first factor with score of 334 followed by capital investment (307) and infrastructural facility (293). Technological availability was ranked as fourth factor with score of (279) closely followed by availability of resource (272) and formalities for starting an enterprise (265). Environment for enterprise, marketability of commodity, marketability of enterprise, employment stress and economic incentives were ranked 7,8,9,10,11 with scores 240, 211, 194, 185 and 184.

Table 4.20 Ranking of factors influencing entrepreneurial behaviour of agricultural students as perceived by unemployed graduates N=50

SINo	Factor	Rank Score											Total	Rank
		1	2	3	4	5	6	7	8	9	10	11		
1	Economic Incentives	3	2	1	3	2	9	3	7	5	7	8	184	XI
2	Employment stress	2	0	4	4	4	2	3	9	16	0	6	185	X
3	Marketability of enterprise	2	2	8	0	6	2	1	7	6	9	7	194	IX
4	Marketability of commodity	0	4	5	3	7	3	1	11	8	4	4	211	VIII
5	Technological availability	2	0	18	6	3	3	4	1	10	1	2	279	IV
6	Environment for enterprise	6	2	6	5	8	1	2	3	1	7	9	240	VII
7	Formalities for starting an enterprise	5	4	4	8	8	4	3	0	1	9	4	265	VI
8	Capital investment	9	6	5	6	4	6	3	1	3	6	1	307	II
9	Availability of resource	8	6	3	3	5	5	7	1	0	7	5	272	V
10	Availability of labour	8	12	3	6	2	5	10	0	0	3	1	334	I
11	Infrastructural facility	3	10	3	6	1	9	13	0	1	2	2	293	III

Results obtained implies that availability of labour, capital investment and infrastructural facility secured the first three ranks. In addition to capital, availability of labour also was perceived as decisive factor. Technological availability was ranked fourth by unemployed graduates which implies that the unemployed graduates feel lack of technological availability as one of the limiting factors for starting an agri enterprise. Economic incentives was perceived as least important by the unemployed graduates.

#### **4.3.4 Factors influencing entrepreneurial behaviour of agricultural students as perceived by male students**

A critical examination of the Table 4.21 reveals that factors such as availability of labour, availability of resource, capital investment and formalities of starting an enterprise were ranked 1,2,3 and 4 with scores 590, 572, 558 and 551 respectively by the male students. This was followed by infrastructural facility, employment stress, economic incentives, and marketability of commodity with ranks 5,6,7 and 8 and scores 488, 468, 464 and 454.

Environment for enterprise, marketability of enterprise and technological availability were ranked 9,10 and 11 with scores 464, 449 and 420 respectively.

Table 4.21 Ranking of factors influencing entrepreneurial behaviour of agricultural students as perceived by male students  
N=100

SlNo	Factor	Rank Score											Total	Rank
		1	2	3	4	5	6	7	8	9	10	11		
1	Economic Incentives	7	5	7	8	5	13	6	29	17	1	2	468	VII
2	Employment stress	14	3	5	5	7	8	7	26	19	2	4	470	VI
3	Marketability of enterprise	6	7	9	10	12	5	1	12	15	17	6	449	X
4	Marketability of commodity	9	4	5	17	11	7	4	10	11	11	11	465	VIII
5	Technological availability	6	6	8	8	9	9	6	5	16	16	11	420	XI
6	Environment for enterprise	7	6	8	11	16	9	4	4	8	14	13	464	IX
7	Formalities for starting an enterprise	7	9	14	17	10	10	8	4	3	9	9	551	IV
8	Capital investment	14	6	14	11	15	6	8	3	3	8	12	558	III
9	Availability of resource	12	18	8	8	9	11	8	6	2	7	11	572	II
10	Availability of labour	18	16	6	4	4	14	20	1	3	7	7	590	I
11	Infrastructural facility	6	22	9	1	2	11	28	0	3	7	11	529	V

Land, labour and capital are three essential requisites that facilitate an enterprise. This factor is emphasised by the results presented in the Table 4.21 i.e. availability of labour, availability of resource and capital investment, and formalities for starting an enterprise and availability of labour being ranked 1,2,3 and 4. Controversial to the results obtained by unemployed graduates, technological availability was ranked least by the male students. The probable reason may be because the male students feel they are more competent technologically to run an enterprise. Marketing also was not perceived as a major factor by male students.

#### **4.3.5 Factors influencing entrepreneurial behaviour of agricultural students as perceived by female students.**

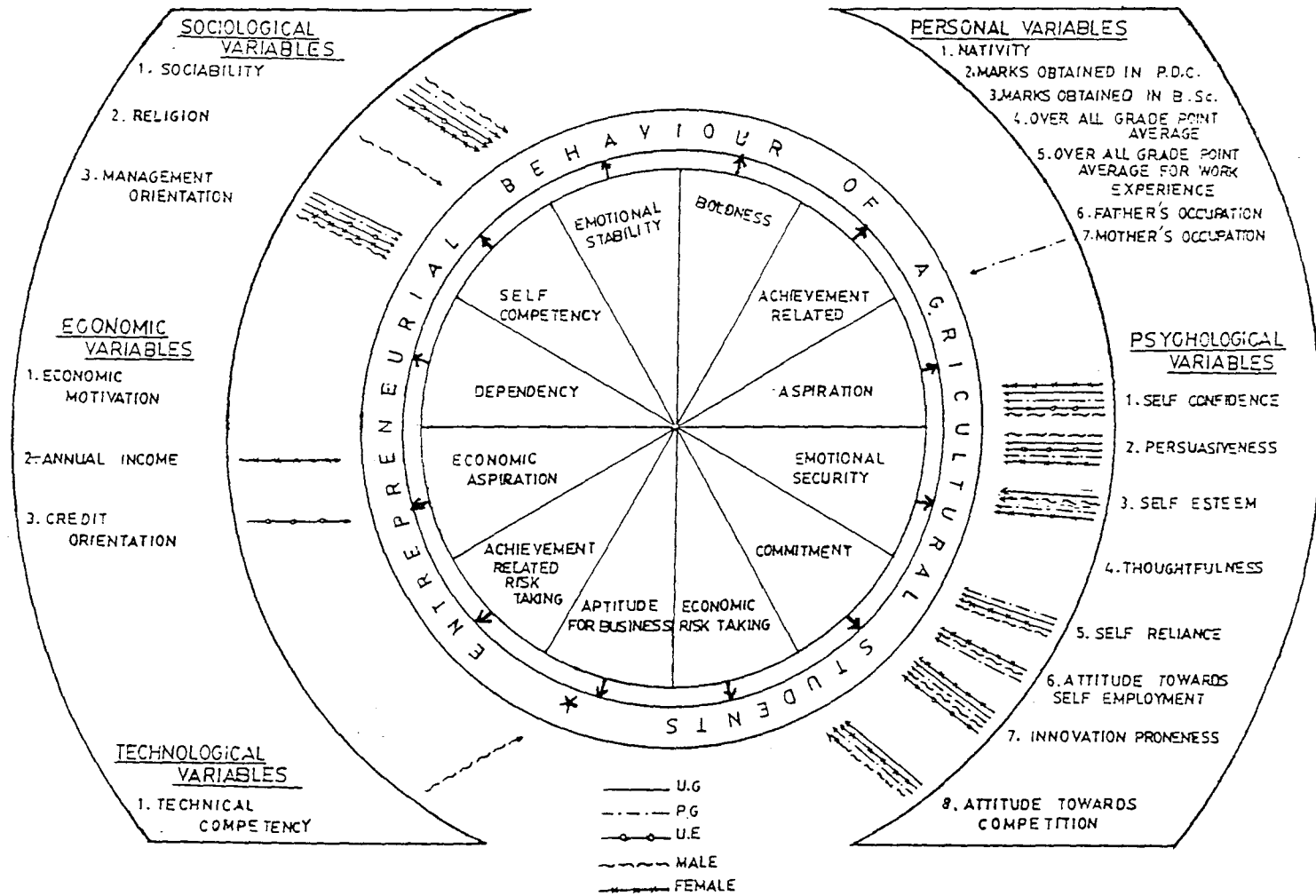
It was revealed from the Table 4.22 that capital investment was ranked as first factor influencing entrepreneurial behaviour as perceived by female respondents closely followed by availability of resources with scores 1002 and 993 respectively.

Formalities for starting an enterprise, infrastructural facility, availability of labour and environment for enterprise were ranked 3, 4, 5 and 6 with scores 895, 873, 850, 792.



Table 4.22 Ranking of factors influencing entrepreneurial behaviour of agricultural students as perceived by female students  
N=150

SINo	Factor	Rank Score											Total	Rank
		1	2	3	4	5	6	7	8	9	10	11		
1	Economic Incentives	2	11	9	11	8	29	4	49	19	4	4	666	IX
2	Employment stress	3	2	6	18	15	9	6	29	39	18	5	564	XI
3	Marketability of enterprise	5	0	16	14	16	10	8	28	26	21	6	611	X
4	Marketability of commodity	6	10	7	14	27	14	7	17	17	18	13	667	VIII
5	Technological availability	15	5	16	15	14	15	12	6	10	18	24	691	VII
6	Environment for enterprise	6	4	21	22	33	14	12	9	8	15	6	792	VI
7	Formalities for starting an enterprise	13	20	20	25	17	12	10	11	3	9	10	895	III
8	Capital investment	23	20	30	19	13	10	16	4	5	5	5	1002	I
9	Availability of resource	22	33	14	10	8	17	13	4	12	13	4	933	II
10	Availability of labour	16	26	13	7	21	24	4	4	5	19	11	850	V
11	Infrastructural facility	16	34	16	7	4	8	30	4	13	8	10	873	IV



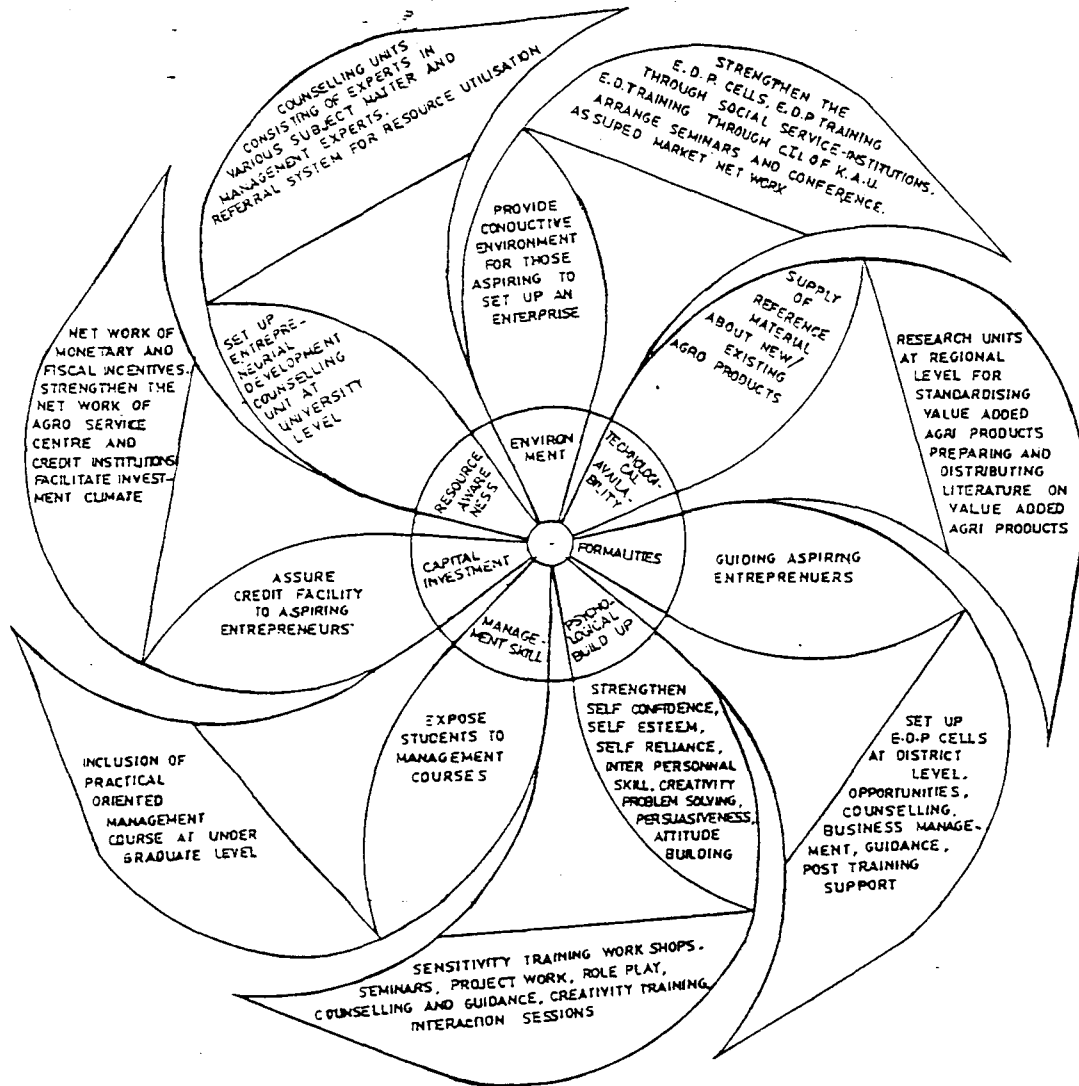
**FIG. 8 EMPIRICAL MODEL OF THE STUDY**

Technological availability, marketability of commodity, economic incentives, marketability of enterprise and employment stress were ranked as 7, 8, 9, 10 and 11 with scores 691, 667, 666, 611 and 564 in the descending order.

Capital investment and availability of resources were perceived as the most important factors that influence entrepreneurial behaviour. They are more concerned about the finance than other factors. Interestingly females have opined that employment stress is of least important with respect to entrepreneurial behaviour.

#### ***4.4 Strategy to inculcate suitable traits in agricultural students to develop entrepreneurial behaviour in them and to develop conducive conditions for undertaking self employment by the agricultural students.***

From the findings of the present study and observations made by the researcher, a future strategy to inculcate the suitable traits in agricultural students to develop entrepreneurial behaviour among them and to develop conducive conditions for undertaking self employment by agricultural graduates is developed and presented (Table 4.23). The same is presented as a strategic model also (fig.9). The inner wheel represents the key needs. The arms represent what need to be done and the outer whorl represents the suggested strategy.



STRATEGIC MODEL TO DEVELOP ENTREPRENEURSHIP AMONG AGRICULTURAL STUDENTS

Table 4.23 Strategy suggested to develop entrepreneurial behaviour among agricultural graduates

Key needs	What need to be done	Suggested strategy
	<p>1. Strengthen self confidence, self esteem and self reliance of students</p>	<p>1. Sensitivity trainings have to be arranged in order to boost up the self confidence of agricultural students.                      2. Arrange workshops and seminars in collaboration with successful entrepreneurs in agriculture field.                      3. Project work should be under taken by students under the expert guidance of practicing entrepreneurs in a earn while you learn model.</p>
<p>1. Equip students Psychologically to take up self employment</p>	<p>2. Improve interpersonal skill, creativity, problem solving skill and persuasiveness of students</p>	<p>1. The students ability to communicate with others can be improved by giving them practice sessions where in role play comes in very handy.                      2. Develop inter personal skill of students through counseling and guidance                      3. Arrange training to develop creativity of students, that is their ability to identify new products and service opportunities, their ability to visualise                      4. Students should be exposed to hypothetical situations that may arise in agri business and ask them to come out with solution, thus teasing and training their brains to be more open and vigilant.</p>
	<p>3. Development of favourable attitude towards self employment</p>	<p>1. Giving the students opportunities to acquaint themselves with successful entrepreneurs. Interaction session need to be arranged at institutional level for this.                      2. Employment guidance bureau should arrange sessions on scope of self employment avenues in agriculture.</p>

Key needs	What need to be done	Suggested strategy
2. Management skill of student's need to be improved	1. Expose students to managerial courses	1. Inclusion of practical oriented management courses at undergraduate level to equip them to manage men and material.
3. Capital investment required - needs support.	1. Assure credit facility to agricultural graduates to set up self employment	1. Government should provide a wide net work of monetary and fiscal incentives to new entrepreneurs. 2. Strengthen the net work of agro service centres and credit institutions at government sector and non-government sector 3. Government should facilitate investment climate for aspiring entrepreneurs.
4. Awareness about resources need to be awakened.	1. Set up entrepreneurial development counselling unit at university level	1. Starting counselling units at university level to help the entrepreneurs to cope with the stress. These counselling units may consists of experts in various subject matter as well as management experts. They need to increase the personal effectiveness and problem solving skills of entrepreneurs through counseling. They also need to develop a referral system where by the client learns how to help himself which involves resource awareness and resource utilisation.

Key needs	What need to be done	Suggested strategy
5. Environment for starting an agri enterprise - need to be made more supportive	1. Provide a conducive environment for those who aspire to set up an enterprise	<ol style="list-style-type: none"> <li>1. Strengthen the centres for entrepreneurship development at state level and district level.</li> <li>2. Government should encourage the social service institute to conduct programmes on entrepreneurial training.</li> <li>3. Central Training Institute of K.A.U should arrange entrepreneurial training programmes for agricultural graduates.</li> <li>4. Organise seminars and conference on development of entrepreneurship in collaboration with professional and research bodies of national character for the agricultural students.</li> <li>5. Government should assure marketing network for entrepreneurs.</li> </ol>
6. Technological availability- create awareness	1. Supply of reference material about new/existing agro products	<ol style="list-style-type: none"> <li>1. Setting up research units at regional level for conducting research for standardising value added agri products.</li> <li>2. Preparing literature on new and existing value added agri products and distribution of the same.</li> </ol>
7. Formalities for starting an enterprise-assistance required.	1. Guiding aspiring entrepreneurs in formulation of projects, getting it approved and executing it	<ol style="list-style-type: none"> <li>1. Setting up E.D.P cells at district level to train the agricultural graduates to set up an agri business.</li> <li>2. Opportunities counselling should be done at E.D.P cells for the agricultural graduates.</li> <li>3. Business management guidance should be made one of the focus of entrepreneurial development training.</li> <li>4. Provide post training support in way of follow up on loan applications for finance, facilitating infrastructure, and tackling problems.</li> </ol>

# SUMMARY



## V SUMMARY

Occupation plays a crucial role in one's life; since it is the major focus of one's activities and usually one's thoughts; the proper evaluation of the role of occupation in the life of an individual should rightly begin with an understanding of the individual and his needs.

The concept of economic man has become obsolete and rather inadequate to explain the urge in man to work. Though it may seem an easy and ready answer to explain his urge to earn a livelihood, it is not as simple as that. For, if this be true, the urge to work should cease, once the basic needs are assured.

The basic resource of any society is the quality of people who compose it. Some individuals inherit special talents and aptitudes and develop scarce resources and develop them through training. A person's potentialities should be explored fully and invested profitably in the occupation he engages in.

Entrepreneurship should be viewed as an indivisible process which flourishes when the inter-linked dimensions of individual psychological entrepreneurial traits,

societal encouragement and business opportunities converge towards the common goal of opportunity creation and exploitation.

Unemployment is a major problem in Kerala where majority of the population is educated. In the agriculture field the fresh graduates are finding it difficult to secure job in Government sector as well as in private sector and banks. Still they are very rarely seen taking up self employment. In agriculture the scope for entrepreneurship is very much. Unless the youth are encouraged to take self employment, there will be a wastage of trained man power. How best the agricultural students can be trained and managed to take up self employment needed to be explored so as to find a way to strengthen their behavioural traits to promote entrepreneurial activities. Hence the present study was undertaken to identify the factors which are conducive for the entrepreneurial behaviour of agricultural students.

## **5.1 Objectives**

- 5.1.1 To develop a scale to measure the entrepreneurial behaviour of agricultural students.

- 5.1.2 To assess the extent of entrepreneurial behaviour of agricultural students.
- 5.1.3 To delineate the psychological, social, economic and technological factors which contribute to the entrepreneurial behaviour of agricultural students.
- 5.1.4 To develop a strategy (1) to inculcate suitable traits in the undergraduate students to develop entrepreneurial behaviour in them and (2) to develop conducive condition for undertaking, self employment by agricultural graduates.

## **5.2 Methodology**

The study was conducted among agricultural students who are undergoing graduation and post graduation and those who have passed out from Kerala Agricultural university who are unemployed. Hundred undergraduate students, 100 postgraduates students, and 50 unemployed graduates formed the respondents for the study. The total sample for the study was 250.

An instrument to quantify entrepreneurial behaviour of agricultural students was developed (summated rating) and tested for its reliability and validity using accepted scientific procedure. The selected personal, psychological, social, economic, and technological variables were measured either using adopted scales or schedules developed for the study. The factors influencing entrepreneurial behaviour of agriculture students as perceived by them were also identified and ranked.

The data were collected by questionnaire method using a pre-tested, structured and standardised, mailed and distributed questionnaire. Analysis of the collected data was done using appropriate statistical procedures like frequencies, coefficient of variation, factor analysis, analysis of variance, simple correlation, step-wise regression, path analysis and chi-square test. The salient findings of the study are presented below.

### **5.3 Findings**

- 5.3.1 A standardised test instrument which is reliable and valid was developed to measure the entrepreneurial behaviour of agricultural students.

- 5.3.2 The maximum likelihood solution for entrepreneurial behaviour extracted 12 factors. About 43 per cent of the total variability in the extent of entrepreneurial behaviour was accounted by twelve factors.
- 5.3.3 Majority of the respondents in the undergraduate group and unemployed graduate were found to have high level of entrepreneurial behaviour.
- 5.3.4 Majority of the male respondents were found to have high level of entrepreneurial behaviour.
- 5.3.5 Distribution of the respondents according to characters.

#### 5.3.5.1. Nativity

Majority of the undergraduate and male respondents were having rural background whereas majority of the postgraduate students, unemployed graduates and female respondents were having urban background.

#### 5.3.5.2 Father's Occupation

In the case of undergraduate students, postgraduate students and unemployed graduates, majority of the respondent's father's occupation was something other than self employment . Similarly with respect to male and female category majority of the respondent's fathers occupation was something other than self employment.

#### 5.3.5.3 Mother's Occupation

Only negligible percentage of the respondent's mother's were self employed in the case of undergraduate, postgraduate, unemployed graduate, male and female respondents.

#### 5.3.5.4 Marks obtained in Pre-Degree

Above 60 per cent of the respondents belonged to the high category in the case of postgraduate students and unemployed graduates whereas only 36 per cent of the undergraduate students belonged to the high category. As to the females, majority belonged to the high category compared to the male.

#### 5.3.5.5 Marks obtained in B.Sc.

Majority of the respondents in the case of postgraduate students and unemployed graduate belonged to the high category whereas only less than 50 per cent belonged to high category with respect to undergraduate students. Majority of the female respondents belonged to high category whereas only a minority belonged to high group in the case of male.

#### 5.3.5.6 Overall grade Point Average

Majority of the respondents belonged to the high group in the case of unemployed graduates, postgraduate students and female group. Only minority of the respondents belonged to the high group in the case of undergraduate students and male students.

#### 5.3.5.7 Overall grade Point Average in work experience

Majority of the respondents in all group expect in the case of unemployed graduates belonged to high category.

#### 5.3.5.8 Self confidence

Majority of the respondents in undergraduate unemployed and male category belonged high group with respect to self confidence.

#### 5.3.5.9 Persuasiveness .

Except in the case of postgraduate category majority of the respondents belonged to high group.

#### 5.3.5.10 Self esteem

Majority of the respondents belonged to high self esteem group in the case of unemployed category whereas majority of the undergraduate, postgraduates, male and female group belonged to low self esteem group.



#### 5.3.5.11 Thoughtfulness

Fifty per cent of the respondents in all the categories had high thoughtfulness with highest being in the undergraduate category and female category.

#### 5.3.5.12 Self reliance

None of the respondents in any of the group said that their future “did not at all” depended on self.

#### 5.3.5.13 Attitude towards self employment

Majority of the respondent belonged to high group in the case of undergraduate, unemployed graduates and female students. Only below 50 per cent of the respondents belonged to the high group in the case of postgraduate and male category.

#### 5.3.5.14 Innovation proneness

Majority of respondents in all the categories belonged to high group with respect to innovation proneness.

#### 5.3.5.15 Attitude towards competition

Majority of the respondents in all the categories belonged to high group.

#### 5.3.5.16 Sociability

Except in the case of postgraduate students in all the groups the per cent distribution of respondents in high group was more than 50.

#### 5.3.5.17 Religion

Representation of Muslims in agricultural course is very low when compared to Hindus and Christians.

#### 5.3.5.18 Management Orientation

More than 65 per cent of the respondents in all the five groups had high management orientation.

#### 5.3.5.19 Economic Motivation

More than 50 per cent of the respondents had high economic motivation in the case of undergraduate students, postgraduate students, unemployed graduates, male and female students.

#### 5.3.5.20 Annual income

More than 50 per cent of the respondents belonged to families whose annual income was above Rupees 50,000 in the case of postgraduate students and male students. In the case of females, undergraduates and unemployed graduates less than 50 per cent of the respondents belonged to families whose annual income was above Rs.50,000/-.

#### 5.3.5.21 Credit Orientation

More than 50 per cent of postgraduate students and male students had high credit orientation where as majority had low credit orientation in the case of undergraduate students, unemployed graduates and female students.

#### 5.3.5.22 Technical competency

More than 55 percent of the respondents had high technical competency in the case of undergraduate students and postgraduate students , where as only 44 per cent of unemployed graduates belong to high technical competency. More than 55 per cent of female had high technical competency where as only 37 percent of the male had high technical competency.

#### 5.3.5.23 Entrepreneurial behaviour

More than 50 per cent of the respondents had high entrepreneurial behaviour in the case of undergraduate students and unemployed graduate where as only 32 per cent

of postgraduate group had high entrepreneurial behaviour forty five per cent of male and 56.67 per cent of female group had only lower entrepreneurial behaviour.

### **5.3.6 Relationship of various characters with entrepreneurial behaviour**

#### 5.3.6.1 Nativity

Nativity was found to be not associated with entrepreneurial behaviour of undergraduate students, postgraduate students, unemployed graduates, male and female students.

#### 5.3.6.2 Father's Occupation

It was found to be not associated with entrepreneurial behaviour of undergraduate students, postgraduate students, unemployed graduates, male and female students.

#### 5.3.6.3 Mother's occupation

Mother's occupation was found to have significant association with entrepreneurial behaviour of postgraduate students. In rest of the cases no association was observed.

#### 5.3.6.4 Marks obtained in Pre-degree

Marks obtained in Pre-degree was found to be not related to entrepreneurial behaviour of any of the category of the respondents.

#### 5.3.6.5 Marks obtained in B.Sc.

Marks obtained in B.Sc. was found to have no significant relation with entrepreneurial behaviour of any of the categories studied.

#### 5.3.6.6 Overall grade Point Average

O.G.P.A. was found to be not related with entrepreneurial behaviour of none of the categories.

#### 5.3.6.7 Over all grade Point Average in work experience

O.G.P.A. (work experience) was observed to have no relation with entrepreneurial behaviour of any of the categories studied.

#### 5.3.6.8 Self confidence

Self confidence was found to have significant positive relation with entrepreneurial behaviour of undergraduate students, postgraduate students, male and female students.

#### 5.3.6.9 Persuasiveness

Persuasiveness was found to have significant positive relation with entrepreneurial behaviour of

undergraduate students, postgraduate students, unemployed graduates, male and female students.

#### 5.3.6.10 Self esteem

Self esteem was found to have significant positive relation with entrepreneurial behaviour of undergraduate students, postgraduate students, male and female students.

#### 5.3.6.11 Thoughtfulness

Thoughtfulness was found to have no significant relation with entrepreneurial behaviour of undergraduate students, postgraduate students, unemployed graduates, male and female students.

#### 5.3.6.12 Self reliance

Self reliance was found to have significant positive relation with entrepreneurial behaviour of



undergraduate students, postgraduate students, male and female students.

#### 5.3.6.13 Attitude towards self employment

Attitude towards self employment was found to have significant positive relation with entrepreneurial behaviour of postgraduate students, male and female students.

#### 5.3.6.14 Innovation proneness

It was found to have significant positive relation with entrepreneurial behaviour of undergraduate students, postgraduates students, unemployed graduates, male and female students.

#### 5.3.6.15 Attitude towards competition

It was found to have significant positive relation with entrepreneurial behaviour of undergraduate students, Postgraduate students, and female students.

#### 5.3.6.16 Sociability

It was found to have significant positive relation with entrepreneurial behaviour of undergraduate students, postgraduate students, male and female students.

#### 5.3.6.17 Religion

Religion was found to have significant association with entrepreneurial behaviour of male students alone.

#### 5.3.6.18 Management orientation

It was found to have significant relation with entrepreneurial behaviour of undergraduate students, postgraduate students, unemployed graduates, male and female students.

#### 5.3.6.19 Economic Motivation

Economic motivation was found to have no significant relation with entrepreneurial behaviour of the respondent in none of the categories.

#### 5.3.6.20 Annual income

Annual income was found to have significant positive relation with entrepreneurial behaviour of female students alone.

#### 5.3.6.21 Credit orientation

It was found to have significant positive relation with entrepreneurial behaviour of unemployed graduates alone.

#### 5.3.6.22 Technical competency

It was found to have significant relation with entrepreneurial behaviour of male students alone.

- 5.3.7.1 Step-wise regression analysis revealed that nine out of eighteen variables studied were responsible for explaining as much as 36.74 per cent of the variation in entrepreneurial behaviour of undergraduate students. These variables were attitude towards self employment, innovation proneness, self confidence, credit orientation, self reliance, sociability, marks obtained in Pre Degree, marks obtained in B.Sc., and management orientation.
- 5.3.7.2 In the case of postgraduate students 49.19 per cent of variation in entrepreneurial behaviour was explained by five variables as per regression analysis. These were attitude towards competition, self esteem, sociability, innovation proneness and O.G.P.A (work experience).
- 5.3.7.3 Results of step-wise regression reveal that 25.12 per cent of variation in entrepreneurial behaviour of unemployed graduates was explained by two variables viz. persuasiveness and innovation proneness.
- 5.3.7.4 As much as 48.23 per cent variability in entrepreneurial behaviour of male students was explained by eight variables of which sociability

turned out to be the most important followed by self reliance, persuasiveness, attitude towards self employment, O.G.P.A(work experience), management orientation, innovation proneness and attitude towards competition.

5.3.7.5 Four out of eighteen variables were responsible for 36.65 per cent of variation in entrepreneurial behaviour of female students. These variables were self esteem, sociability, innovation proneness and credit orientation.

5.3.8.1 Marks obtained in B.Sc., marks obtained in pre degree(negative) management orientation, sociability and credit orientation were found to have maximum direct effect on entrepreneurial behaviour of undergraduate students. Persuasiveness, self esteem and attitude towards competition were found to have maximum indirect effect.

5.3.8.2 Sociability, innovation proneness, management orientation and O.G.P.A(work experience) (negative) were found to have maximum direct effect on entrepreneurial behaviour of postgraduate students. Attitude towards competition was ranked first with respect to indirect effect.

- 5.3.8.3 In the case of unemployed graduates credit orientation had maximum direct effect on entrepreneurial behaviour of unemployed graduates but in negative direction. Persuasiveness, innovation proneness, self reliance and management orientation were the other variables. Marks obtained in B.Sc. had maximum indirect effect.
- 5.3.8.4 O.G.P.A and O.G.P.A(work experience)(negative) were ranked first and second with respect to maximum direct effect on entrepreneurial behaviour of male students. The same variables were ranked first and second in total indirect effect also.
- 5.3.8.5 In the case of female students self esteem had maximum direct effect followed by persuasiveness, sociability and innovation proneness. Persuasiveness and sociability had maximum total indirect effect on entrepreneurial behaviour of female students.
- 5.3.9.1 Availability of resources, capital investment, formalities for starting an enterprise, availability of labour and environment for enterprise were ranked as first, second, third, fourth and fifth factors that influence entrepreneurial behaviour of agriculture students as perceived by undergraduate students.

- 5.3.9.2 Capital investment, infrastructural facilities, availability of resource, economic incentives and availability of labour were ranked in that order as factors influencing entrepreneurial behaviour of agricultural students as perceived by postgraduate students.
- 5.3.9.3 In the case of unemployed graduates, availability of labour, capital investment, infrastructural facility, technological availability and availability of resource were ranked sequentially as factors influencing entrepreneurial behaviour of agricultural students as perceived by them.
- 5.3.9.4 Availability of labour, availability resource, capital investment, formalities for starting an enterprise and infrastructural facility were ranked in the order of importance as perceived by male students in influencing entrepreneurial behaviour of male students.
- 5.3.9.5 In the case of female students, capital investment was ranked as the first factor followed by availability of resources, formalities for starting an enterprise infrastructural facilities and availability of labour as

influencing entrepreneurial behaviour of agricultural students as perceived by them.

#### ***5.4 Implication of the findings of the study for improving entrepreneurial behaviour of agricultural students***

The development and standardisation of the measurement device designed to quantify the entrepreneurial behaviour and technical competency of the students could be adopted as a reliable tool in similar and related studies in other parts of the country.

The analysis of the concept of entrepreneurial behaviour and presentation of its finer details in the study would enable the planners, university academicians and even research students in this field to have a clear understanding of the concept. This in turn would help the university academicians and planners to formulate programmes to improve entrepreneurial behaviour of agricultural graduates and would help the researchers to take up detailed investigation in this field.

The findings of this study in relation to entrepreneurial behaviour of agricultural students indicate that the undergraduate students, unemployed graduates and



male students have higher level of entrepreneurial behaviour than females and postgraduates. The unemployed graduates though they have positive attitude towards self employment and have high entrepreneurial behaviour are still unemployed. The reason for the same have to be identified through further research and necessary measures are to be taken to root out the causes so as to encourage them to take up entrepreneurial ventures.

The positive and significant relationship of many factors like self confidence, self esteem, management orientation, self reliance, persuasiveness, attitude towards self employment etc. with entrepreneurial behaviour of agriculture students pin points to the need for continuous and well planned efforts to strengthen these characteristics. The results on contribution of these factors to entrepreneurial behaviour and their direct effects as well spell out the same things.

### **Suggestions for future research**

This study was limited to only limited batches of students with a restricted sample size and therefore, generalization based on this alone will not be meaningful. The study has to be extended to number of batches of students.

For want of time and resource only limited factors could be included. Many more variables are yet to be studied in this connection.

Case studies of successful agricultural entrepreneurs need to be taken up to investigate the factors influencing entrepreneurial behaviour.

Action research studies on entrepreneurial development among agricultural graduates should be taken up.

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\* Originals not seen

# APPENDICES

## APPENDIX - I

Dr. Babu  
Professor and Head

Kerala Agricultural University  
Department of Agricultural Extension  
College of Agriculture  
Vellayani-695522

Dear Sir/Madam,

Smt.B.Seema, Ph.D. Scholar of this department under my supervision has taken up the research problem “Interaction of psychological, economic, sociological and technological determinants of the entrepreneurial behaviour of agricultural students”. In this connection she has collected a list of variables which are likely to influence entrepreneurial behaviour and are given in the Appendix Ia enclosed herewith.

Considering your vast experience in the field of agricultural extension, you are kindly requested to rate the variables with regard to the importance of each variable in influencing the entrepreneurial behaviour of agricultural students. Kindly record your judgment in the three point continuum of “Most important” “important” and “least important” by putting a (✓) mark in the appropriate column. If you feel any more important variable has been left out, kindly add the same with your judgment to the scholar.

Items presumably related to entrepreneurial behaviour selected from review of literature and discussion with experts are provided in appendix Ib. Please put a tick mark against each item in the appropriate column to indicate your judgment on the degree of relevancy of items. please also offer your valuable rating of the factors influencing entrepreneurial behaviour.

Please send the appendices duly filled in to the research scholar in the self addressed stamped envelope enclosed.

Thanking you in advance  
with best regards

Yours Sincerely

Encl.: Appendices  
Stamped self addressed envelope

B.Babu  
Professor and Head

## Appendix I 'a'

Entrepreneur - A person who initiates production, takes decision, bears risks, involves, organises and coordinates other factors of production.

Entrepreneurial behaviour - its a set of characteristics associated with persons who possess the drive and capabilities to obtain and manage the variety of inputs necessary to successfully undertake a venture.

Variables influencing entrepreneurial behaviour.

M.R-Most relevant

R- relevant

L.R.-Least relevant

Sl. No	Variable	Operational definition	M.R.	R	L.R
1	Age	number of calendar years completed by the respondent at the time of interview			
2	Religion	Refers to the religion to which the respondent belongs.			
3	Management orientation	Refers to the degree to which respondent is oriented towards scientific management of an enterprise in agriculture comprising planning, production and marketing of his enterprise			
4	Persuasiveness	Refers to the ability to influence by argument, by reason, inducement or to win over other persons to accept something to be true, credible, essential, commendable or worthy.			

<b>Sl. No</b>	<b>Variable</b>	<b>Operational definition</b>	<b>M.R</b>	<b>R</b>	<b>L.R</b>
5	Adaptability	Refers to the ability of a respondent to respond quickly to different people, changing environment or situation.			
6	Economic motivation	Profit maximisation and the relative value placed by the entrepreneur on economic end.			
7	Credit Orientation	It is the degree of orientation to avail credit by the respondent.			
8	Overall modernity	Refers to the quality or condition of being modern, modernness of character.			
9	Self reliance	Extent to which a person relies on self for his future.			
10	Parental occupation	Refers to the occupation of the parent.			
11	Fatalism	Refers to the belief of the respondent that human situation/act are predetermined by some super natural power and can never or little be influenced by individual volition or by act of any-one else.			
12	Self confidence	Refers to the belief of a respondent in his own abilities.			
13	Attitude towards self employment	It is a mental disposition of the respondent towards self employment.			
14	Technical competency	Refers to the extent to which the respondent possess knowledge on the various aspects of scientific agriculture.			

<b>Sl. No</b>	<b>Variable</b>	<b>Operational definition</b>	<b>M.R</b>	<b>R</b>	<b>L.R</b>
15	Self esteem	Means the evaluation which the individual makes and customarily maintains with regard to himself, it express an attitude of approval or disapproval.			
16	Sociability	Refers to the extent to which the individual makes friends, he likes social contacts and social activity.			
17	Friendliness	Refers to the extent to which the individual tolerates hostile action and he is agreeable and respectful of others.			
18	Thoughtfulness	Extent to which respondent have thinking introversion, reflectiveness, being observant and meditative.			
19	Value orientation	Defined as those aspects of respondent which commit him to the observance of certain norms, standards and criteria for selection whenever he is in a contingent situation which allows him to make a choice.			
20	Family size	Refers to the number of members in the family.			
21	Attitude towards competition	Refers to the mental disposition of the individual towards competition in general.			
22	Annual income of the family	Refers to the annual income of the family.			



<b>Sl. No</b>	<b>Variable</b>	<b>Operational definition</b>	<b>M.R</b>	<b>R</b>	<b>L.R</b>
23	Innovation proneness	It is the interest and desire of persons to seek changes in techniques and introduce such changes in their avocation.			
24	Educational Qualification	Refers to the educational status of the respondents, whether under going graduation, or post graduation is unemployed graduate.			
25	Nativity	Refers to whether the respondent hails from a rural community or urban community.			
26	Marks obtained in Pre-degree	This is the percentage of marks obtained by the respondent for the pre-university examination.			
27	Marks obtained in B.Sc.	This is the percentage of marks obtained by the respondent for the B.Sc.(Ag.) programme.			
28	O.G.P.A in work experience	This is the average grade point obtained by the respondent considering all the work experience courses.			
29	O.G.P.A	This is the Overall Grade Point Average obtained by the respondent for the under graduate course.			
30	Sex	Refers to whether the respondent is a male or female.			

## Appendix I 'b'

Items for measuring entrepreneurial behaviour.

R = Most relevant, R = Relevant L.R. = Least relevant.

Sl. No	Item (Statement)	M.R	R	L.R
1.	The decision to avail loan for starting an enterprise will be done in consultation with all the family members.			
2.	If at all you decide to start a new venture it will be a decision made by you on your own			
3.	You always prefer others to make major decision for you.			
4.	When confronted with alternative solution you are confused.			
5.	you leave it to your parents to make major decisions.			
6.	you are confident to take the decision to avail loan for starting an enterprise.			
7.	When other people suggest different courses of action you are not confused.			
8.	You do not consult other people when you decide to try new practices.			
9.	You will not consult other people when you decide to buy things.			
10.	You feel confident only when decisions are made in consultation with elders.			

Sl. No	Item (Statement)	M.R	R	L.R
11.	When faced with alternatives you take the initiative to decide the course of action			
12.	Government is supplying loan to the educated unemployed youth for self employment. The amount has to be repaid within a period of three years, even if your enterprise runs at a loss. You will be ready to take the risk.			
13.	At present there is ready market for cut flowers. One is not sure about the demand for the same in the coming years. You will be ready to take the risk and go in for commercial cultivation of cut flowers.			
14.	Assume that you are cultivating pepper crop in your land. If you store the dry pepper in government godowns you can sell it at a higher price provided the price goes up, whereas if the price goes down you have to face heavy loss in addition to the payment of rent. You will be ready to take the risk.			
15.	For running a consultancy service in agriculture unlike the case of doctors one may have to go in search of customers. One may have to face some lean periods. Will you be ready to take the risk of running a consultancy at irregular returns.			
16.	If the Silkboard is providing inputs for promoting sericulture but is not assuring the market for the produce. you will be prepared to take up the risk.			

Sl. No	Item (Statement)	M.R	R	L.R
17.	If you go for a government job you will get a salary of Rs.4000/-per month. If you start an enterprise you may be able to get double the amount. But there are chances of losses also You will prefer to start an enterprise.			
18.	Suppose a new private firm offers you a job as manager. The survival of the firms depends on the effort you put in. In addition to a fixed salary they offer your commission in proportion to the sale of their produce. At the same time you are offered a job with the government which is permanent, you will opt for the government job.			
19.	The type of house you expect to have in next 5 years is 4-5 roomed pucca house.			
20.	You expect your general contentment in life in the next 3 years to be certainly better.			
21.	Suppose you are getting a lottery worth Rupees one lakh you would start an agri enterprise.			
22.	The most likely thing to happen in the next 5 years time is your securing a government job rather than establishing an enterprise.			
23.	You would be prepared to take a loan for starting an enterprise rather than for purchasing a house.			
24.	If you have saving of Rs.50000/- in the bank you would rather continue the deposit than invest it in business.			

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Sl. No	Item (Statement)	M.R	R	L.R
25.	Suppose your parents are in possession of some house luxuries and a piece of fertile land, given a choice you would opt for the piece of fertile land.			
26.	You never sit back waiting for others to bring information.			
27.	Whenever you want to know more about something you take the initiative to seek the information.			
28.	You prefer to do things on your own drive.			
29.	You feel confident to do things when others prompt you.			
30.	You prefer to follow the leader rather than lead the group if an option is given.			
31.	You are reluctant to do things on your own drive.			
32.	It is foolish to take initiative and bear the risk when there are others to take lead.			
33.	When you are with a group which is assigned to do a specific task you take the initiative to get things done.			
34.	You hesitate to take the first step for fear of failure.			
35.	You would enjoy work as much as play.			
36.	You would work like a slave at everything you undertake to get a result.			

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Sl. No	Item (Statement)	M.R	R	L.R
37.	You would succeed in your occupation even if you have been neglectful of your family			
38.	You would have determination and driving ambition to achieve certain things in life even if these qualities make you unpopular.			
39.	Work should come first even if you cannot get rest.			
40.	Even when your interests are in danger you would concentrate on your job and forget your obligation to others.			
41.	You would set difficult goals for yourself and try to reach them.			
42.	You try to excel in the work you sets to do.			
43.	Even when there are chances of failure you would take the risk and try to achieve the goal.			
44.	You would achieve the goals set by you even if it deprives others of their right.			
45.	You would avoid doing work which may be exposed to evaluation.			
46.	Your efforts are always directed towards specific goals.			
47.	You sometimes feel just miserable for no good reason at all.			
48.	You have frequent ups and downs in mood sometimes with and sometimes without apparent cause .			

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Sl. No	Item (Statement)	M.R	R	L.R
49.	You usually remain cheerful in spite of trouble.			
50.	You generally keep cool and think clearly in exciting situation.			
51.	Certain people deliberately say or do things to annoy you.			
52.	You feel lonesome even when with other people.			
53.	You are generally free from worry about possible misfortune.			
54.	You remain in uniform spirit most of the time.			
55.	your moods often changes from happiness to sadness or vice versa without your knowing why.			
56.	Your mood is easily influenced by people around you.			
57.	You sometimes feel listless and tired for no good reasons.			
58.	You are generally free from worry about possible misfortune.			
59.	Other people often blame you for things you didn't do.			
60.	When you loose something you often begin to suspect someone of either having taken it of having misplaced it.			

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Factors influencing entrepreneurial behaviour

M·R

R

L·R

1. Employment stress
  2. Marketability of enterprise
  3. Marketability of commodity
  4. Technological availability
  5. Economic incentives
  6. Environment for enterprise
  7. Formalities for starting an enterprise
  8. Parent's occupational aspiration about their children
  9. Moral support of dear and near
  10. Capital investment
  11. Availability of resources
  12. Availability of labour
  13. Infrastructural facility.
-



## Appendix II

### Independent variables with their relevancy index

Sl.No.	Variables	Relevancy Index
1.	Age	70.0 *
2.	Caste	72.0 *
3.	Management orientation	91.6 *
4.	Persuasiveness	72.5 *
5.	Adaptability	69.0
6.	Economic Motivation	72.5 *
7.	Credit Orientation	87.7 *
8.	Overall modernity	59.8
9.	Self reliance	88.0 *
10.	Parental Occupation	70.0 *
11.	Fatalism	55.4
12.	Self confidence	93.1 *
13.	Attitude towards self employment	94.1 *
14.	Technical competency	83.8 *
15.	Self esteem	77.9 *
16.	Sociability	75.9 *
17.	Friendliness	62.5
18.	Thoughtfulness	73.0 *
19.	Value Orientation	47.5
20.	Family size	57.1
21.	Attitude towards competition	77.0 *
22.	Annual Income of family	80.0 *

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Sl.No.	Variables	Relevancy Index
23.	Innovation Proneness	89.2 *
24.	Educational qualification	78.0 *
25.	Nativity	72.0 *
26.	Marks Obtained in pre-degree	70.0 *
27.	Marks Obtained in B.Sc.(Ag.)	70.0 *
28.	O.G.P.A in work experience	72.5 *
29.	O.G.P.A	71.2 *
30.	Sex	90.7 *

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\* Variables selected for the study

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## Appendix III

### Items generated with relevancy index based on judges relevancy rating

Sl. No	Item (statement)	Relevancy Index
1.	The decision to avail loan for starting an enterprise will be done in consultation with all family members.	74.50*
2.	If at all you decide to start a new venture it will be decision made by you on your own	79.9*
3.	You always prefer others to make major decision for you.	58.8
4.	When confronted with alternative solutions you are confused	62.2
5.	You leave it your parents to make major decisions	60.8
6.	6. You are confident to take the decision to avail loan for starting an enterprise	89.7*
7.	When other people suggest different courses of action you are not confused	48.5
8.	You do not consult other people when you decide to try new practices.	73.0*
9.	You will not consult other people when you decide to buy things.	63.7
10.	You feel confident only when decisions are made in consultation with elders.	73.5*
11.	When faced with alternatives you take the initiative to decide the course of action	85.8*

Sl. No	Item (statement)	Relevancy Index
12.	Government is supplying loan to the educated unemployed youth for self employment. The amount has to be repaid within a period of three years even if your enterprise runs at a loss . You will be ready to take the risk.	84.3*
13.	At present there is ready market for out flowers. One is not sure about the demand for the same in the coming years. you will be ready to take the risk and go in for commercial cultivation of cut flowers.	82.4*
14.	Assume that you are cultivating pepper crop in your land. If you store dry pepper in government godowns you can sell it at a higher price provided the price goes up, whereas if the price goes down you have to face heavy loss in addition to payment of rent. You will be ready to take the risk.	80.8*
15.	For running consultancy service in agriculture unlike the case of doctors one may have to go in search of customers. One may have to face some lean periods. Will you be ready to take the risk of running a consultancy at irregular returns.	62.3
16.	16. If silk board is providing inputs for promoting sericulture but is not assuring market for the produce, you will be prepared to take up the task.	75.5*

Sl. No	Item (statement)	Relevancy Index
17.	If you go for a government job you will get salary of Rs 4000/- per month. If you start an enterprise you may be able to get double the amount, but there are chances of failure also. You will prefer to start an enterprise.	89.7*
18.	Suppose a new private firm offers you job as a manager. The survival of the firm depends on the efforts you put in. In addition to the fixed salary they offer you commission in proportion to the sale of their produce. At the same time you are offered a job with the government which is permanent. You will opt for the government job.	85.3*
19.	You some times feel just, miserable for no good reason at all.	54.4
20.	You have frequent ups and downs in mood, sometimes with and sometimes without apparent cause.	62.2
21.	You usually remain cheerful in spite of trouble	73.0*
22.	You generally keep cool and think clearly in exciting situation.	75.5*
23.	Certain people deliberately say or do things to annoy you.	62.2
24.	You feel lonesome even when with other people	75.0*
25.	You are generally free from worry about possible misfortune.	58.8
26.	You remain in uniform spirit most of the time.	77.45*
27.	Your moods often changes from happiness to sadness or vice versa without your knowing why	51.0
28.	Your mood is easily influenced by people around you	77.0*

<b>Sl. No</b>	<b>Item (statement)</b>	<b>Relevancy Index</b>
29.	You sometimes feel listless and tired for no good reasons.	77.0*
30.	You are generally free from worry about possible misfortune.	69.6
31.	Other people often blame you for things you didn't do.	59.0
32.	When you loose something you often begin to suspect someone of either having taken it or having misplaced it.	60.0
33.	You never sit back waiting for others to bring information.	78.9*
34.	Whenever you want to know more about something you take the initiative to seek the information.	87.7
35.	You prefer to do things on your own drive	83.3*
36.	you feel confident to do things when others prompt you.	73.0*
37.	You prefer to follow the leader rather than lead the group if an option is given.	62.7
38.	You are reluctant to do things on your own drive	65.0
39.	It is foolish to take initiative and bear the risk when there are others to take lead.	74.0*
40.	When you are with a group which is assigned to do a specific task you take the initiative to get things done.	81.4*
41.	You hesitate to take the first step for fear of failure.	63.7
42.	You would enjoy work as much as play.	74.5*
43.	You would work like a slave at everything you undertake to get a result.	66.6
44.	You would succeed in your occupation even if you have been neglectful of your family.	80.88*

Sl. No	Item (statement)	Relevancy Index
45.	You would have determination and driving ambition to achieve certain things in life even if these qualities make you unpopular.	70.5*
46.	Work should come first even if you cannot get rest.	69.6
47.	Even when your interests are in danger you would concentrate on your job and forget your obligation to others.	69.6*
48.	You would set difficult goals for yourself and try to reach them.	79.4
49.	You would try to excel in the work you set to do.	83.3*
50.	Even when there are chances of failure you would take the risk and try to achieve the goal.	83.3*
51.	You would achieve the goals set by you even if it deprives others of their right.	73.5*
52.	You would avoid doing work which may be exposed to evaluation.	70.5*
53.	Your efforts are always directed towards specific goals.	74.0*
54.	The type of house you expect to have in the next 5 years is 4-5 roomed pucca house.	65.7
55.	You expect your general contentment in life in the next 3 years to be certainly better.	74.5
56.	Suppose you are getting a lottery worth Rupees one lakh you would utilise the money to start an agri enterprise.	79.4*
57.	The most likely thing to happen in the next 5 years time is your securing a government job rather than establishing an enterprise.	74.0*

<b>Sl. No</b>	<b>Item (statement)</b>	<b>Relevancy Index</b>
58.	You would be prepared to take loan for starting an enterprise rather than for purchasing a house	79.4*
59.	If you have a saving of Rs.50,000/- in the bank you would rather continue the deposit than invest it in business.	81.37*
60.	60. Suppose your parents are in possession of some luxuries and a piece of fertile land, given a choice you would opt for the piece of fertile land.	76.96*

\* Items selected for inclusion in the scale.



## Appendix IV

### Other Factors influencing entrepreneurial behaviour

Sl.No.	Factors	Relevancy Index
1.	Employment stress	80.1 *
2.	Marketability of enterprise	84.7 *
3.	Marketability of commodity	83.0 *
4.	Technological availability	85.3 *
5.	Economic incentives	92.0 *
6.	Environment of enterprise	87.0 *
7.	Formalities for starting an enterprise	85.3 *
8.	Parent's occupational aspiration about their children.	72.1
9.	Moral support of dear and near	68.7
10.	Capital investment	82.1 *
11.	Availability of resources	87.0 *
12.	Availability of labour	90.2 *
13.	Infrastructural facility	83.7 *

\* Factors selected for inclusion in the study

## Appendix V

Department of Agricultural Extension  
College of Agriculture,  
Vellayani - 695522.

To

Dear Sir/Madam,

Smt. B.Seema, Ph.D. Scholar of this department has taken up a research problem “Interaction of Psychological economic, sociological and technological determinants of the entrepreneurial behaviour of agricultural students” under my guidance. As part of the work, she is developing a scale to measure entrepreneurial behaviour of Ag. graduates and students. In this connection she has prepared a list of statements, kindly go through the same and indicate your response regarding agreement or disagreement with the statements.

Thanking you in advance

Yours sincerely

B.Babu  
Professor and Head and Head

## Appendix V 'a'

Please indicate your extent of agreement/disagreement to the following statements by putting tick mark(✓) in the appropriate column (S.A = strongly agree, A= agree, U.D = Undecided, D.A = Disagree, S.D.A = Strongly disagree.)

---

Sl. No	Statements	S.A	A	U.D	D.A	S.D.A
1.	The decision to avail loan for starting an enterprise will be done in consultation with the family members.					
2.	If at all you decide to start a new venture it will be a decision made by you on your own.					
3.	You are confident to take the decision to avail loan for starting an enterprise.					
4.	You do not consult other people when you decide to try new practices.					
5.	You feel confident only when decisions are made in consultation with elders.					
6.	When faced with alternatives you take the initiative to decide the course of action.					
7.	Government is supplying loan to the educated unemployed youth for self employment. The amount has to be repaid within a period of three years, even if your enterprise runs at a loss. You will be ready to take the risk .					

---

Sl. No	Statements	S.A A U.D D.A S.D.A
8.	At present there is ready market for cut flowers. Even if you are not sure about the demand for the same in the coming years you will be ready to take the risk and go in for commercial cultivation of cut flowers.	
9.	Assume you are a pepper cultivator. If you store dry pepper in godowns you can sell it at a higher price, provided the price goes up. If the price goes down you have to pay the rent in addition to bearing the loss. You will opt for the storage.	
10.	If the Silkboard is providing inputs for promoting sericulture but is not assuring the market for the produce, you will be prepared to take up the enterprise.	
11.	If you go for a government job you will get a salary for Rs. 4000/- month. If you start an enterprise you may be able to get double the amount. But there are chances of loss also. You will prefer to start an enterprise.	
12.	Suppose a new private firm offers you a job as a manager. The survival of the firm depends on the effort you put it. In addition to fixed salary, they offer you commission in proportion to the sale of their produce. At the same time you are offered a government job which is permanent. You will prefer the government job.	
13.	You usually remain cheerful inspite of trouble .	

Sl. No	Statements	S.A	A	U.D	D.A	S.D.A
14.	You generally keep cool and think clearly in exciting situation.					
15.	You feel lonesome even when with other people.					
16.	Your mood is very easily influenced by people around you.					
17.	You remain in uniform spirit most of the time.					
18.	You sometimes feel listless and tired for no good reason.					
19.	You never sit back waiting for other to bring information.					
20.	Whenever you want to know more about something you take the initiative to seek the information.					
21.	You prefer to do things on your own drive					
22.	You feel confident to do things when others prompt you.					
23.	It is foolish to take initiative and bear the risk when there are others to take lead.					
24.	When you are with a group which is assigned to do a specific task, you take the initiative to get things done.					
25.	You would enjoy work as much as play.					

Sl. No	Statements	S.A A U.D D.A S.D.A
26.	You would succeed in your occupation even if you are neglectful of your family.	
27.	You would have determination and driving ambition to achieve certain things in life even if these qualities make you unpopular.	
28.	You would set difficult goals for yourself and try to reach them.	
29.	You would try to excel in the work you set to do.	
30.	Even if when there are chances of failure you would take the risk and try to achieve the goal.	
31.	You would achieve the goal set by you even if it deprives others of their right.	
32.	You would avoid doing work which may be exposed to evaluation.	
33.	Your efforts are always directed towards specific goals.	
34.	You would expect your general contentment in life in the next three years to be certainly better.	
35.	Suppose you are getting a lottery worth Rupees one lakh you would start an enterprise.	

Sl. No	Statements	S.A	A	U.D	D.A	S.D.A
36.	The most likely thing to happen in the next 5 years time is your securing a government job rather than establishing an agricultural enterprise.					
37.	You would be prepared to take loan for starting an agricultural enterprise rather than for purchasing a house.					
38.	If you have a saving of Rs.50,000/- you would rather continue the deposit than invest it in business.					
39.	Suppose your parents are in possession of a piece of fertile land and a car given a choice you would opt for the piece of fertile land.					

### Self confidence

Please indicate your extent of agreement/disagreement to the following statements by putting tick mark(✓) in the appropriate column (S.A = strongly agree, A= agree, U.D = Undecided, D.A = Disagree, S.D.A = Strongly disagree.)

Sl. No	Statements	S.A	A	U.D	D.A	S.D.A
1.	I feel no obstacle can stop me from achieving my final goal.					
2.	I am generally confident of my own ability.					
3.	I am bothered by inferiority feelings.					
4.	I do not have initiative .					

---

Sl. No	Statements	S.A A U.D D.A S.D.A
5.	I usually workout things for myself rather than get someone to show me	
6.	I get discouraged easily.	
7.	Life is a strain for me in much of the time.	
8.	I find myself working about something or other always.	

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## Appendix VI

Item analysis: Discrimination index and correlation of item score with total score of entrepreneurial behaviour.

Item	Discrimination index 't' value	'r' value
1.	4.817 *	0.436 **
2.	2.582 *	0.252 *
3.	4.460 *	0.411 **
4.	0.214	0.002
5.	2.882 *	0.279 **
6.	5.845 *	0.508 **
7.	4.075 *	0.381 **
8.	1.063	0.107
9.	0.179	0.018
10.	3.977 *	0.373 **
11.	6.563 *	0.553 **
12.	4.038 *	0.378 **
13.	3.422 *	0.327 **
14.	3.223 *	0.309 **
15.	4.021 *	0.376 **
16.	4.379 *	0.405 **
17.	2.550 *	0.249 **
18.	2.953 *	0.285 **
19.	3.525 *	0.369 **
20.	3.525 *	0.335 **
21.	6.589 *	0.554 **
22.	3.558 *	0.338 **
23.	3.819 *	0.359 **
24.	6.281 *	0.536 **
25.	0.339	0.003
26.	3.650 *	0.346 **
27.	5.969 *	0.516 **
28.	3.618 *	0.343 **
29.	3.576 *	0.339 **
30.	5.225 *	0.467 **
31.	1.142 *	0.111
32.	0.147	0.001

---

Item	Discrimination index	
	't' value	'r' value
33.	2.376 *	0.233 *
34.	3.571 *	0.339 **
35.	6.164 *	0.579 **
36.	4.056 *	0.529 **
37.	6.169 *	0.494 **
38.	5.618 *	0.486 **
39.	5.500 *	0.702 **

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\*significant at 0.05% level

\*\*significant at 0.01% level

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## Appendix - VII

Department of Agricultural Extension  
College of Agriculture,  
Vellayani - 695522.

Seema. B  
Ph.D. Scholar.

Dear Sir,

As part of my research programme, I am developing a scale to measure the technical competency of agricultural students. I am enclosing a list of agricultural management practices followed by farmers.

Kindly spare few minutes to state whether the practice followed by them are correct or not. The information requested here is purely for research purpose and not aimed at any particular individual . Therefore your frank and honest answers are of great value in developing this scale.

Yours Sincerely,

Seema.B

## Appendix VII 'a'

Please do not write your name

### Technical competency.

Read the following statements carefully and choose the correct answer from the alternatives provided. Indicate your response with a tick (✓) mark.

1. To control Rhinoceros grub farmer 'A' treated the soils of manure pit with Aldrin before storing manure in the pit. Farmer 'B' sprinkled B.H.C dust on the surface of manure heap. In your opinion, who is more efficient.

(1) Farmer 'A'                      (2) Farmer 'B'

2. As an inter-crop in coconut garden farmer 'A' raised tapioca and farmer 'B' raised guinea grass. In your opinion whose action is most appropriate considering soil fertility aspects

(1) Farmer 'A'                      (2) Farmer 'B'

3. As an inter crop in coconut garden farmer 'A' raised guinea grass and farmer 'B' raised congo grass to avoid soil erosion. In your opinion who is efficient.

(1) Farmer 'A'                      (2) Farmer 'B'

4. Farmer 'A' sprayed Bavistin to control quick wilt of pepper and farmer 'B' sprayed Bordeaux Mixture. In your opinion which chemical is effective

(1) Bavistin                          (2) Bordeaux Mixture

5. A farmer got few yellow dwarf and few brown coloured seedlings from 30 year old ideal natural cross dwarf mother palm. The farmer rejected brown coloured seedlings because of colour variation whether his decision is

- (1) Correct                      (2) Wrong

6. To control bud rot in coconut farmer, 'A' applied Bavistin and farmer 'B' applied Bordeaux mixture. In your opinion which is most effective.

- (1) Bavistin                      (2) Bordeaux Mixture

7. A farmer from Chittoor taluk has chosen Rohini in II<sup>nd</sup> crop transplanted condition. In your opinion, his selection is

- (1) Appropriate                (2) Not appropriate

8. As a prophylactic measure in a 20 year old coconut garden to control leaf blight farmer 'A' sprayed Bordeaux mixture at the rate of 1 liter/plant, farmer 'B' sprayed at the rate of 1.5 liter/plant and farmer 'C' sprayed at the rate of 2 liter/plant. in your opinion who is correct.

- (1) A is correct                (2) B is correct                (3) C is correct

9. To obtain better quality black pepper farmer 'A' dipped the berries immediately after harvest in boiling water for one minute, and farmer 'B' for 5 minutes. In your opinion which is ideal.

- (1) A's action                (2) B's action

10. When the fruit fly infection is severe in bitter gourd farmer 'A' applied B.H.C 10% in the basin and raked, farmer 'B' applied B.H.C 10% in the basin as

well as in the whole plot and raked. In your opinion whose action is most appropriate.

- (1) Farmer 'A'      (2) Farmer 'B'      (3) both are wrong

11. A farmer collected seed nuts from 25 years old well maintained T & D coconut garden. whether his action is appropriate.

- (1) Appropriate      (2) Not appropriate

12. Farmer 'A' observed heavy crinkling and malformation in the yielding chili and he uprooted and destroyed the plants immediately. Farmer 'B' observed the symptoms and sprayed Roger 30 EC. In your opinion who is more efficient.

- (1) Farmer 'A'      (2) Farmer 'B'

13. A farmer has fed tender leaves for late age silk worms. His action is

- (1) Correct      (2) Not correct

14. A farmer provides high humid condition during the young larval stage while rearing silk worms with the help of wet foam pads. His action is

- (1) Correct      (2) Not correct

15. Farmer 'A' uses same type trays for rearing silk worms at all stages whereas farmer 'B' makes use of different type of trays. Whose action is correct.

- (1) Farmer 'A'      (2) Farmer 'B'

16. A farmer feeds the silkworms with unchopped leaves during the final instar stage whereas he feeds it chopped leaves during young instar age. His action is
- (1) Correct                      (2) Not correct
17. For effective spinning farmer 'A' mounts the worms on a Chandrike just before ripening stage whereas Farmer 'B' mounts it after ripening. Whose action is correct.
- (1) Farmer 'A'                      (2) Farmer 'B'
18. A farmer has applied superphosphate for coconut in acid soil. His action is
- (1) Correct                      (2) Not correct
19. A farmer has used innoculum of rhizobium for Bhindi. His action is
- (1) Correct                      (2) Not correct
20. Farmer 'A' has applied bio-fertilizers and chemical fertilizers for his crop on the same day. Farmer 'B' has applied bio-fertilizers and chemical fertilizers at a gap of two weeks. Whose action is correct.
- (1) Farmer 'A'                      (2) Farmer 'B'
21. A farmer has applied 15% urea as foliar spray for amaranthus using knapsack sprayer. His action is
- (1) Correct                      (2) Not correct

22. A farmer has applied superphosphate as basal dose for banana. His action is
- (1) Correct                      (2) not correct
23. A farmer has treated paddy seeds with zinc sulphate at the rates of one percent. His action is
- (1) Correct                      (2) Not correct
24. A farmer has thrown in left over biriyani in the vermi compost pit. His action is
- (1) Correct                      (2) Not correct
25. Farmer 'A' sowed rhizobium treated seeds within 24 hrs. of treatment. Farmer 'B' kept it in shade for 3 days and then sowed. whose action is correct
- (1) Farmer 'A'                      (2) Farmer 'B'
26. A farmer raised sesbanium rostrata as green manure for his paddy field during puncha season. His action is
- (1) Correct                      (2) Not correct
27. Farmer 'A' mixed urea and superphosphate two weeks before application in the field, whereas farmer 'B' mixed urea and superphosphate only at the time of application. Who is correct?
- (1) Farmer 'A'                      (2) Farmer 'B'



28. Farmer 'A' has applied superphosphate as broadcasting whereas farmer 'B' supplied it as placement in acid soil. Whose action is correct.

- (1) Farmer 'A'                      (2) Farmer 'B'

29. A farmer applied 'Benthiocarb' as weedicide 6 days after transplanting and farmer 'B' applied it after one month of transplanting. Whose action is correct.

- (1) Farmer 'A'                      (2) Farmer 'B'

30. A farmer applied gramaxon at the rate of 1.5 kg ai/ha in 1000 l. of water for controlling salvinia. His action is

- (1) Correct                      (2) Not correct

31. The most commonly grown genera of Mushroom in Kerala is

- (1) button Mushroom (2) Oyster mushroom

32. Scientific method to identify poisonous mushroom is

- (1) Presence of volva and annulus in the same mushroom  
(2) Scales on the piles

33. Oyster mushroom can be cultivated in

- (1) Undecomposed substrata (2) Decomposed substrata

34. Fruiting bodies of oyster mushrooms can be harvested.  
(1) Within ten days of spawning      (2) A fortnight after spawning
35. The nutritional supplements used for paddy straw bed is  
(1) Chicken manure      (2) Dhal powder
36. Management of pests in Oyster mushroom farms is done by  
(1) Mechanical control only      (2) Mechanical and chemical control
37. For base planting of building tall trees are used  
(1) Correct      (2) Not correct
38. Shady corners can be ideally utilized as lawns  
(1) Correct      (2) Not correct
39. Trees of specimen planting in lawns should be low growing  
(1) Correct      (2) Not correct
40. To make public garden look spacious lawns should be planned alternating with trees.  
(1) Correct      (2) Not correct
41. A farmer purchased a grafted mango and planted it with graft union below the soil. His action is  
(1) Correct      (2) Not correct

42. While doing T budding in rose, the eye of the bud should not be covered with polythene strip.

- (1) Correct                      (2) Not correct

43. Farmer 'A' practiced side grafting in guava and farmer 'B' did air layering. Whose action is correct.

- (1) Farmer 'A'                      (2) Farmer 'B'

44. What is the range of temperature suitable for anthurium cultivation?

- (1) 18 - 28                      (2) 30 -45

45. The percentage shade under which orchid is grown is

- (1) 25%                      (2) 50%                      (3) 75%

46. The optimum atmospheric humidity for orchid cultivation is

- (1) 45%                      (2) 70%                      (3) 100%

47. Longevity of orchid spikes when cut is

- (1) 2 weeks                      (2) 4 weeks                      (3) 6 weeks

48. The most suited sympodial orchid for cultivation in Kerala is
- (1) Oncidium            (2) Cattleya            (3) Dendrobium
49. A common monopodial orchid is
- (1) Arachnis            (2) Rhyncostylis            (3) Aranda.
50. \_\_\_\_\_ is a natural auxin.
- (1) I.A.A.            (2) N.A.A.            (3) I.B.A            (4) Kinetin            (5) B.A.
51. An excised plant part used for tissue culture is called
- (1) Explant            (2) Auxiliary bud            (3) Plantlet            (4) Somatic embrioid
52. The most important advantage of micropropagation is
- (1) Rapid rate of multiplication  
(2) Only limited quantity of initial plant materiel is required  
(3) Propagation is not season dependent  
(4) The plants produced will be disease free
53. A crop in which micropropagation protocol has not been standardised.
- (1) Coconut            (2) Banana            (3) Cardamom (4) Jack            (5) Black pepper

54. Totipotency is the \_\_\_\_\_.

(1) Ability of one cell to develop into a new plant

(2) Ability too produce new variance

(3) Production of somatic embryos from a cell

55. Farmer 'A' gives a tapping rest for 3 to 4 weeks at the time of defoliation after wintering whereas farmer 'B' does not give any rest. Whose action is correct.

(1) Farmer 'A'

(2) Farmer 'B'

56. Brown bast of rubber is a disorder of

(1) Latex vessel

(2) Cambium tissue

57. Which among the following is used as an yield stimulant in rubber.

(1) Ethephon

(2) 2 4 D

58. Brown budding differ from green budding mainly in

(1) Type of scion used

(2) Type of root stock used.

59. The promising clone evolved at Rubber Research Institute of India is

(1) RRII 105 .

(2) RRII 305

60. For doing stone grafting in mango which among the following is ideal.

- (1) Shoot with new flushes    (2) Shoots which are one year old  
(3) Shoots which have been defoliated one week prior to grafting

61. For grafting a scion of cricket ball variety the most suitable root stock is

- (1) Kirni seedlings    (2) Punna seedlings    (3) Sapota seedlings

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Note- The correct answers are underlined.

## Appendix VIII

**Values of difficulty index, discrimination index and  
point biserial correlation  
for all the 61 items.**

Item No.	Difficulty index	Discrimination index	Point biserial correlation
1	0.750	0.500	0.290
2*	0.563	0.375	0.391
3	0.000	0.000	0.000
4*	0.600	0.500	0.514
5	0.688	0.750	0.082
6	0.813	0.125	0.211
7	0.688	0.125	0.051
8	0.000	0.000	0.000
9	0.250	0.250	0.302
10*	0.500	0.500	0.270
11	0.500	0.750	0.429
12	0.438	0.125	0.071
13	0.750	0.250	0.171
14*	0.550	0.500	0.397
15	0.938	0.125	0.162
16	0.813	0.125	0.105
17	0.813	0.125	0.160
18	0.813	0.125	0.211

Item No.	Difficulty index	Discrimination index	Point biserial correlation
19	0.688	0.375	0.186
20*	0.438	0.325	0.283
21	0.938	0.125	0.256
22	0.938	0.125	0.203
23	0.525	0.500	0.433
24	0.562	0.250	0.278
25	0.875	0.125	0.211
26	0.438	0.125	0.056
27	0.938	0.125	0.177
28	0.875	-0.250	-0.012
29*	0.550	0.250	0.310
30	0.750	0.500	0.022
31	0.750	0.500	0.011
32	0.750	0.250	0.180
33	0.750	0.250	0.237
34*	0.588	0.375	0.335
35*	0.588	0.625	0.448
36	0.000	0.000	0.000
37*	0.525	0.500	0.321
38	0.688	0.125	0.211
39*	0.525	0.500	0.321
40	0.375	-0.250	-0.127
41	0.813	0.125	0.160
42	0.750	0.000	-0.021
43	0.815	0.135	0.170
44	0.938	-0.125	-0.202



Item No.	Difficulty index	Discrimination index	Point biserial correlation
45	0.625	0.000	-0.007
46*	0.525	0.250	0.281
47*	0.525	0.250	0.299
48	0.525	0.250	0.136
49*	0.563	0.625	0.466
50*	0.588	0.375	0.313
51	0.813	-0.125	0.006
52*	0.525	0.250	0.279
53*	0.588	0.375	0.319
54	0.813	0.125	0.119
55	0.000	0.000	0.000
56	0.750	-0.150	-0.250
57	0.938	0.125	0.297
58	0.813	0.125	0.143
59	0.875	0.250	0.288
60*	0.500	0.500	0.316
61	0.938	0.125	0.261

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\* Selected items

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### 11. Self confidence

Please indicate your extent of agreement/disagreement to the following statements by putting a tick mark (✓) in the appropriate column (SA: strongly agree, A : Agree, UD : Undecided , DA : Disagree. SDA : strongly disagree)

Sl. No	Statements	Response pattern				
		S.A	A	U.D	D.A	S.DA
1.	I feel no obstacle can stop me from achieving my final goal.					
2.	I am generally confident of my own ability.					
3.	I am bothered by inferiority feelings.					
4.	I do not have initiative.					
5.	I usually workout things for myself rather than get someone to show me.					
6.	I get discouraged easily					
7.	Life is a strain for me in much of the time.					
8.	I find myself working about something or the other always.					

### 12. Persuasiveness:

Kindly indicate the extent to which you engage in the following activities.

Sl. No	Statements	Response pattern		
		Always	Sometimes	Never
1.	My arguments with my friends regarding anything lead to quarrel.			

Sl. No	Statements	Response pattern		
		Always	Sometimes	Never
2.	I have the ability to get full co-operation from my friends in carrying out any team activity.			
3.	I always have difference of opinion with my friends.			
4.	My suggestions regarding various projects are appreciated and accepted by my friends.			
5.	I am unable to influence my friends in doing things according to my wish.			
6.	I lack capacity to put forward my arguments during discussion with others.			

13. self esteem :

Some statements are given below. Indicate how much you agree with the statements. There are five response categories, viz., A B C D E. A denotes strongly agree, B denotes agree, C denotes undecided, D denotes disagree, E Strongly disagree.

Sl. No	Statements	Response pattern				
		A	B	C	D	E
1.	I am proud of my academic performance					
2.	I have a very satisfactory home atmosphere					
3.	Most people are better liked than I am.					
4.	If I have something to say I usually say it.					

Sl. No	Statements	Response pattern				
		A	B	C	D	E
5.	I find it very difficult to talk in front of a group.					
6.	I can usually take care of myself.					
7.	I have a good opinion of myself.					
8.	When I am with a group of people I often have trouble thinking about the right things to talk about.					
9.	I often feel that my life is not very useful.					
10.	My parents understand me well.					
11.	I don't have much to be proud of.					
12.	I often feel ashamed of myself.					
13.	I Prefer to do things that are novel and difficult.					
14.	I am fully confident of my abilities.					
15.	I find it hard to make talk when I meet new people.					
16.	Things are all mixed up in my life.					
17.	I can make up my mind and stick to it.					
18.	I often wish I were someone else.					
19.	I am not doing well in life as I would like to.					
20.	On the whole I am satisfied with myself.					

Sl. No	Statements	Response pattern				
		A	B	C	D	E
21.	I get upset easily at home.					
22.	I am never shy.					
23.	I often get discouraged in life.					
24.	There are many times when I would like to leave home.					
25.	I am able to do things as well as most other people.					

#### 14. Sociability:-

Please indicate your agreement or disagreement with the following statement by putting a tick mark in the appropriate column. A: Agree, UD: Undecided, D: Disagree.

Sl. No	Statements	Response pattern		
		A	UD	D
1.	You find it easy to make new acquaintance.			
2.	You like to take part in many social activities.			
3.	It is difficult for you to chat about things in general with people.			
4.	It bother you to have people watch you at work .			

Sl. No	Statements	Response pattern		
		A	UD	D
5.	You would like to be host or hostess for parties at club.			
6.	You find it easy to start conversation with strangers.			
7.	You are so naturally friendly that people immediately feel at ease with you.			
8.	After being introduced to some one you just cannot think of things to say to make good conversation.			
9.	You have difficulty in making new friends.			
10.	You are often the life of the party.			
11.	There are only a few friends with whom you can relax and have a good time.			
12.	People think of you as being a very social type of person.			
13.	You are shy especially before members of the opposite sex.			
14.	You are a listener rather than a talker in social conversation.			
15.	You like to be with people.			
16.	People seem to enjoy being with you.			
17.	Shyness keeps you from being as popular as you should be.			
18.	You can easily get along in company .			

Sl. No	Statements	Response pattern		
		A	UD	D
19.	You have more acquaintances and friends than most people.			
20.	You can easily mix with a group of people who are strangers to you.			

15. Thoughtfulness:-

Sl. No	Statements	Response pattern		
		A	UD	D
1.	You often try to analyse the motives of others.			
2.	You make it a policy to evaluate your past actions carefully.			
3.	You are philosophically inclined, that is inclined to philosophise about things.			
4.	You are frequently lost in thought.			
5.	You like to discuss most serious questions of life with your friends.			
6.	You often would like to know the underlying reason behind the actions of other people.			
7.	You enjoy thinking out complicated problems.			
8.	You often take time out just to meditate about things.			

Sl. No	Statements	Response pattern		
		A	UD	D
9.	You find it very interesting to watch people to see what they will do.			
10.	You are constantly alert to ways of improving yourself.			
11.	You try to sense what people are thinking about as they talk to you .			
12.	After a critical moment is over, you usually think of something you should have done but didn't do.			
13.	You are much concerned over the morals of your generation.			
14.	You enjoy analysing your own thoughts and feelings.			
15.	You frequently find yourself in a meditative state.			
16.	You are inclined to be introspective, that is to analyse yourself.			
17.	You are inclined to live in the present, leaving the past and the future out of your thoughts.			
18.	You like to have time to be alone with your thoughts.			
19.	You often wonder why people behave as they do.			
20.	You often watch others to see what effects your words or actions have upon them			



## 16. Management Orientation:

Please state the agreement or disagreement to each of the statements below

---

Sl.No	Agree/ Disagree
a) Planning Orientation:-	
1.	It is not necessary to think ahead of the cost involved in starting an enterprise.
2.	One need not consult any expert /organisation for planning.
3.	It is possible to make profit through production plan.
4.	It is not necessary to make prior decision about starting an enterprise .

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## b) Production Orientation:-

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Sl.No	Agree/ Disagree
1.	Timely production ensures more profit.
2.	One should use those raw materials for production one likes.
3.	Scientific methods in production involves high cost.
4.	For scientific production one should have proper knowledge about the technology.
5.	Training is essential for starting an enterprise.

---

c) Marketing Orientation:-

Sl.No	Agree/ Disagree
1.	Market news is not useful to an enterprise.
2.	An entrepreneur can get good price by grading his produce.
3.	One should sell the produce to the nearest market irrespective of the price.
4.	One should purchase the inputs from shops where one's relatives purchase.
5.	One should start those enterprises which have more market demand.

17. Economic Motivation:

Please indicate your degree of agreement, with the following statements.

SA = Strongly agree, A = Agree, UD = Undecided, DA = Disagree, SDA = Strongly disagree.

Sl. No	Statements	Response pattern				
		S.A	A	U.D	D.A	S.DA
1.	An entrepreneur should work hard for economic profit					
2.	The most successful entrepreneur is one who makes more profit.					
3.	An entrepreneur should try any new ideas which may earn more money.					
4.	An entrepreneur must earn his/her living but most important thing in life cannot be defined in economic terms .					



3. When the fruit fly infection is severe in bitter gourd farmer 'A' applied B.H.C 10% in the basin and raked, farmer 'B' applied B.H.C 10% in the basin as well as in the whole plot and ranked. In your opinion whose action is most appropriate.

(1) Farmer 'A'            (2) Farmer 'B'            (3) both are wrong.

4. A farmer collected seed nuts from 25 years old well maintained T & D coconut garden. Whether his action is appropriate.

(1) Appropriate            (2) Not appropriate.

5. A farmer provided high humid condition during the young larval stage of silk worm with the help of wet foam pads. His action is

(1) correct            (2) not correct

6. Farmer 'A' has applied biofertilizers and chemical fertilizers for his crop on the same day. Farmer 'B' has applied biofertilizers and chemical fertilizers at a gap of two weeks. Whose action is correct.

(1) Farmer 'A'            (2) Farmer 'B'

7. A farmer has treated paddy seeds with Zinc sulphate at the rate of one percent. His action is

(1) correct            (2) not correct.

8. A farmer has thrown in left over biriyani in the vermi compost pit. His action is

(1) correct (2) not correct.

9. A farmer applied 'Benthiocarb' as weedicide 6 days after transplanting and farmer 'B' applied it after one month of transplanting. Whose action is correct.

(1) Farmer 'A' (2) Farmer 'B'

10. Fruiting bodies of oyster mushrooms can be harvested.

(1) Within ten days of spawning (2) A fortnight after spawning

11. The nutritional supplements used for paddy straw bed is

(1) Chicken manure (2) Dhal powder

12. For base planting of buildings tall trees are used

(1) correct (2) not correct

13. Trees for specimen planting in lawns should be low growing

(1) correct (2) not correct

14. The optimum atmospheric humidity for orchid cultivation is
- (1) 45%                      (2) 75%                      (3) 100%
15. Longevity of orchid spikes when cut is
- (1) 2 weeks                      (2) 4 weeks                      (3) 6 weeks
16. A common monopodial orchid is
- (1) Arachnis                      (2) Rhyncostylis                      (3) Aranda
17. \_\_\_\_\_ is a natural auxin.
- (1) I.A.A.      (2) N.A.A.      (3) I.B.A.      (4) Kinetin      (5) B.A.
18. The most important advantage of micropropagation is
- (1) Rapid rate of multiplication  
(2) only limited quantity of initial plant material is required  
(3) Propagation is not season dependent  
(4) The plants produced will be disease free
19. A crop in which micropropagation protocol not been standardised.
- (1) Coconut    (2) Banana    (3) Cardamom (4) Jack                      (5) Black pepper

20. For doing stone grafting in mango which among the following is ideal

- (1) Shoot with new flushes
- (2) Shoots which are one year old
- (3) Shoots which have been defoliated one week prior to grafting.

20. self Reliance

How much of your future depends on yourself?

- fully 100% (5)
- 75 - 99% (4)
- 50 - 74% (3)
- 25 - 49% (2)
- 1 - 24% (1)

21. Attitude towards self employment

Please indicate your agreement or disagreement with the following statements.

---

Sl. No	Statements	Agree / Disagree
1.	Agriculture is a potential field for self employment during the present period of extreme unemployment.	
2.	Self employment in agriculture is an independent profession as it offers freedom.	
3.	Self employment in agriculture help one to become self sufficient in life.	
4.	Self employment in agriculture is desirable since one need not expect any sanction from any official.	

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Sl. No	Statements	Agree / Disagree
5.	For an unemployed youth agriculture is a sure profession facing the vagaries of life.	
6.	Since there are ample technologies available in agriculture one can make self employment in agriculture easily.	
7.	Agriculture is the basis for other industries so selecting self employment in agriculture is always worthy.	
8.	It is unwise to select self employment in agriculture as it needs more physical and mental efforts.	
9.	There is no necessity for an educated unemployed youth to go for self employment in agriculture as government jobs are meant for him.	
10.	Sound family background in agriculture is a necessity for selecting self employment in it.	

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## 22. Innovation proneness

Please indicate your response in the appropriate alternative by putting a tick mark. (✓) SA : Strongly agree, A : agree, UD : undecided, D : disagree, SD : strongly disagree.

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Sl. No	Statements	Response pattern				
		S.A	A	U.D	D.A	S.D
1.	You would feel restless unless you tryout an innovative method of which you have come across.					
2.	You are cautious about trying new practices					
3.	You like to keep up-to-date information about the subjects of your interest.					
4.	You would prefer to wait for others to tryout new practices first.					
5.	You opt for the traditional way of doing things than go in for newer methods.					

---

## 23. Attitude towards competition.

Please indicate your agreement or disagreement with the following statements.

---

Sl. No	Statements	Response pattern				
		S.A	A	U.D	D.A	S.DA
1.	Competition in education is not desirable					
2.	Games should be for exercise and pleasure and not for competition .					

---

Sl. No	Statements	Response pattern				
		S.A	A	U.D	D.A	S.DA
3.	Competition leads to quarrels and hence should be discouraged.					
4.	There is no fun in games with no competition.					
5.	It is desirable to encourage competition as there is competition in all spheres of life.					
6.	Competitive spirit is needed for world progress.					
7.	The base for a person's development is the competitive spirit he has					
8.	Competitive spirit prompts one to do good things.					
9.	Only persons with competitive spirit will succeed in life.					
10.	Even when I feel that I'll win the competition I do not take part in it.					
11.	Competitive spirit is very much needed to completely bring out the hidden abilities of a person.					
12.	Co-operative activities end in failure.					
13.	Competitive spirit is not a healthy attitude.					

## Part II

Entrepreneurial behaviour.

Please indicate your agreement or disagreement, with the following statement by putting a tick mark (✓) in the appropriate column. SA = Strongly agree, A = agree, UD = undecided, D = disagree, SDA = Strongly disagree.

---

Sl. No	Statements	Response pattern				
		S.A	A	U.D	D.A	S.DA
1.	The decision to avail loan for starting an enterprise will be done in consultation with the family members.					
2.	It at all you decide to start a new venture it will be a decision made by you on your own.					
3.	You are confident to take the decision to avail loan for starting an enterprise.					
4.	You feel confident only when decisions are made in consultation with elders.					
5.	When faced with alternatives you take the initiative to decide the course of action.					
6.	Government is supplying loan to the educated unemployed youth for self employment. The amount has to be repaid within a period of three years even if your enterprise runs at a loss. You will be ready to take the risk.					
7.	If the silk board is providing inputs for promoting sericulture but it is not assuring the market for the produce, you will be prepared to take up the enterprise					

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Sl. No	Statements	Response pattern				
		S.A	A	U.D	D.A	S.DA
8.	If you go for a government job you will get a salary of Rs.4000/- month. If you start an enterprise you may be able to get double the amount. But there are chances of loss also. You will prefer to start an enterprise.					
9.	Suppose a new private firm offers you a job as a manager. The survival of the firm depends on the effort you put in. In addition to fixed salary, they offer you commission in proportion to the sale of their produce. At the same time you are offered a government job which is permanent. You will prefer the government job.					
10.	You usually remain cheerful inspite of trouble.					
11.	You generally keep cool and think clearly in exciting situation.					
12.	You feel lonesome even when with other people.					
13.	Your mood is very easily influenced by people around you.					
14.	You remain in uniform spirit most of the time					
15.	You sometimes feel listless and tired for no good reason.					
16.	You never sit back waiting for others to bring information .					

Sl. No	Statements	Response pattern				
		S.A	A	U.D	D.A	S.DA
17.	Whenever you want to know more about something you take the initiative to seek the information.					
18.	You prefer to do things on your own drive.					
19.	You feel confident to do things when others prompt you.					
20.	It is foolish to take initiative and bear the risk when there are others to take lead.					
21.	When you are with a group which is assigned to do a specific task, you take initiative to get things done.					
22.	You would succeed in your occupation even if you are neglectful of your family.					
23.	You would have determination and driving ambition to achieve certain things in life even if these qualities make you unpopular.					
24.	You would set difficult goals for yourself and try to reach them.					
25.	You would try to excel in the work you set to do.					
26.	Even if there are chances of failure you would take the risk and try to achieve the goal.					
27.	Your efforts are always directed toward specific goals.					

Sl. No	Statements	Response pattern				
		S.A	A	U.D	D.A	S.DA
28.	You would expect your general contentment in life in the next three years to be certainly better.					
29.	Suppose you are getting a lottery worth Rs.1 lakh you would start an enterprise.					
30.	The most likely thing to happen in the next 5 years time is your securing a government job rather than establishing an enterprise.					
31.	You would be prepared to take loan for starting an enterprise rather than for purchasing a house.					
32.	If you have saving of Rs.50000/- you would rather continue the deposit than invest it in business.					
33.	Suppose your parents are in possession of a piece of fertile land and a car given a choice you would opt for the piece of fertile land.					

### Part III

Factors influencing entrepreneurial behaviour.

Please rank in order of importance each of the following factors, that influence entrepreneurial behaviour.

---

Sl. No	Factors	Rank
1.	Economic incentives	
2.	Employment stress	
3.	Marketability of enterprise	
4.	Marketability of commodity	
5.	Technological availability	
6.	Environment for enterprise	
7.	Formalities for starting an enterprise	
8.	Capital investment	
9.	Availability of resources	
10.	Availability of labour	
11.	Infrastructural facility	

---

In your opinion which are the major lacuna or constraints that one has to face in starting a self employment venture in agriculture.

Curriculum related

General

**Appendix X  
Factor Matrix**

Item no	FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6	FACTOR7	FACTOR8	FACTOR9	FACTOR10	FACTOR11	FACTOR12
I <sub>1</sub>	-0.21748	0.10159	0.04736	0.20959	-0.11534	0.10026	-0.12780	0.20313	0.00358	0.17000	0.22561	-0.02454
I <sub>2</sub>	-0.08240	0.00537	0.35056	0.12187	-0.17904	0.18978	0.19846	0.15975	-0.24891	0.13520	0.01214	0.01443
I <sub>3</sub>	0.04256	0.14002	0.45712	0.09448	-0.01767	0.15309	0.40583	0.16517	-0.24983	-0.05314	-0.17361	-0.09368
I <sub>4</sub>	-0.06997	0.17855	0.82620	0.40844	-0.00718	0.07354	-0.13589	0.11226	-0.01531	0.05027	0.25865	0.03896
I <sub>5</sub>	0.02967	0.15073	0.36892	-0.03103	0.11277	-0.04006	0.02723	0.15059	-0.09886	0.11312	-0.17890	0.03618
I <sub>6</sub>	0.06264	0.22257	0.32818	0.20624	-0.07071	-0.06640	0.30369	0.00888	0.27569	-0.21836	-0.09820	-0.00191
I <sub>7</sub>	0.04828	-0.00652	0.09620	0.29281	-0.07879	-0.23889	0.23676	0.13939	0.27828	-0.08678	0.11053	-0.10648
I <sub>8</sub>	0.04172	0.03949	0.42443	0.28515	-0.03793	-0.26758	0.00581	-0.16763	0.09465	-0.01510	-0.17951	-0.15477
I <sub>9</sub>	0.07489	0.05463	0.27016	0.35509	0.02973	-0.19571	-0.17603	-0.01339	0.01028	0.34145	-0.12312	0.01280
I <sub>10</sub>	0.72306	0.69005	-0.00240	-0.00004	-0.00040	0.00008	-0.00032	0.00006	-0.00010	0.00009	-0.00017	-0.00025
I <sub>11</sub>	0.31089	0.36863	0.22703	-0.14644	0.19809	-0.12360	0.22611	0.05427	-0.12189	-0.03432	0.14538	0.10588
I <sub>12</sub>	0.07781	0.16009	0.92570	0.02967	0.40090	-0.07430	0.01681	-0.06197	0.00312	0.05935	-0.08549	0.15329
I <sub>13</sub>	0.01799	0.06203	0.07881	0.31783	0.57796	0.18783	0.08707	-0.16592	0.11694	0.03501	0.06036	0.05166
I <sub>14</sub>	0.36183	0.18412	0.07667	-0.01306	0.19456	0.03228	0.23450	0.11988	0.03275	-0.00370	0.13497	0.09355
I <sub>15</sub>	0.00708	0.19698	0.07685	0.20705	0.24265	0.07971	-0.03779	-0.12249	-0.13296	0.24359	-0.17196	0.10307
I <sub>16</sub>	0.02417	0.13293	0.49910	0.00008	0.15113	-0.22039	-0.15537	0.38120	0.19971	0.05766	0.06142	-0.10042
I <sub>17</sub>	0.09626	0.09944	0.59578	-0.18388	0.19221	0.12695	-0.26927	0.18324	-0.08313	-0.22881	-0.02662	-0.02836
I <sub>18</sub>	0.02378	0.23956	0.42462	-0.22191	0.11731	0.01866	-0.12442	-0.02439	0.03137	-0.20828	0.02320	0.13112
I <sub>19</sub>	0.06694	0.03188	-0.03340	0.18039	-0.11585	-0.00759	0.18690	0.12620	0.10098	0.01475	0.21360	0.29452
I <sub>20</sub>	-0.71096	0.70252	-0.00138	-0.00019	0.00009	-0.00006	0.00012	0.00003	0.00030	-0.00012	-0.00001	-0.00010
I <sub>21</sub>	-0.03823	0.10322	0.41155	-0.12098	0.24699	-0.05783	-0.02849	0.00310	-0.16968	0.13593	0.12357	-0.23475
I <sub>22</sub>	0.06176	0.04946	0.12212	0.12732	-0.14767	0.31812	-0.01350	0.00023	-0.06670	0.08230	0.33059	-0.20730
I <sub>23</sub>	-0.00471	0.19845	0.40727	0.13300	-0.20063	0.48922	-0.14475	-0.01201	0.24497	0.06101	-0.10316	-0.05161
I <sub>24</sub>	0.09900	0.15078	0.56619	-0.17389	-0.15985	0.08231	0.13653	-0.00634	0.11473	0.09531	0.04115	0.15588
I <sub>25</sub>	0.06897	0.29583	0.48426	-0.29535	-0.04579	-0.20532	0.00212	-0.12128	0.16021	0.10243	0.01047	0.02167
I <sub>26</sub>	-0.03758	0.27434	0.61172	-0.07996	-0.13124	-0.07205	-0.02288	-0.19475	-0.08580	0.04796	0.07991	0.00994
I <sub>27</sub>	-0.00355	0.14828	0.52058	-0.18791	-0.14709	-0.08449	0.04368	-0.22194	-0.14008	0.14148	0.08207	0.10736
I <sub>28</sub>	0.11265	0.08562	0.33054	-0.23579	-0.03746	-0.00903	0.008297	-0.12859	0.22505	0.05563	0.07323	-0.05148
I <sub>29</sub>	0.09397	0.10224	0.31132	0.35013	-0.02379	-0.08082	-0.07657	-0.30653	-0.14023	-0.27121	0.19985	-0.03055
I <sub>30</sub>	0.02574	0.13598	0.16650	0.39028	-0.11865	-0.18995	-0.12087	0.17743	-0.13597	0.06041	0.02515	0.12980
I <sub>31</sub>	0.12891	0.20288	0.22099	0.35117	-0.00734	0.10543	-0.05582	-0.20889	0.01754	-0.03042	-0.06627	-0.21361
I <sub>32</sub>	-0.01966	0.14759	0.18600	0.35152	-0.18231	-0.07454	-0.20919	0.02852	-0.15729	-0.26587	-0.11581	0.17868
I <sub>33</sub>	0.14695	0.10550	0.13150	0.11187	0.23123	0.18037	-0.00519	-0.00575	0.09024	-0.04768	0.00460	0.04673
	4.3	5.5	10.8	4.8	3.3	2.8	2.4	2.2	2.1	1.9	1.7	1.4



# ABSTRACT

**INTERACTION OF PSYCHOLOGICAL,  
ECONOMIC, SOCIOLOGICAL AND  
TECHNOLOGICAL DETERMINANTS OF THE  
ENTREPRENEURIAL BEHAVIOUR OF  
AGRICULTURAL STUDENTS**

*BY*

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**ABSTRACT OF THE THESIS**

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## ABSTRACT

The study aimed to identify the factors which are conducive for the entrepreneurial behaviour of agricultural students. The study was conducted among the students of the two Agricultural colleges of Kerala Agricultural University and the unemployed graduates who have passed out from these colleges. Two hundred and fifty respondents were selected for the main study which comprised of 100 undergraduate students, 100 postgraduate students and 50 unemployed graduates.

The entrepreneurial behaviour of agricultural students was measured with the help of a scale developed for the study. Based on relevancy rating twenty four independent variables were selected. Data were collected through mailed, and distributed questionnaire.

The maximum likelihood solution for entrepreneurial behaviour extracted 12 factors. About 43 per cent of the total variability in the extent of entrepreneurial behaviour was accounted by twelve factors.

Majority of the respondents in the undergraduate group and unemployed graduates were found to have high level of entrepreneurial behaviour. Similarly majority of the

male respondents were found to have high level of entrepreneurial behaviour.

Self esteem, sociability, innovation proneness, self confidence, attitude towards competition, management orientation, persuasiveness, and self reliance were found to be significantly and positively related to entrepreneurial behaviour of undergraduate students.

In the case of postgraduate students attitude towards competition, self esteem, innovation proneness, management orientation, self confidence, persuasiveness, sociability, self reliance and attitude towards self employment were found to be significantly and positively related.

As to the unemployed graduates significant positive relationship was observed between entrepreneurial behaviour and persuasiveness, management orientation, innovation proneness, self confidence and credit orientation.

Sociability, self reliance, self confidence, attitude towards competition, self esteem, persuasiveness, management orientation, innovation proneness, attitude towards self employment and technical competency were found to be significantly and positively related with entrepreneurial behaviour of male students.

In the case of female students, self confidence, self esteem, self reliance, attitude towards self employment, sociability, management orientation, persuasiveness, annual income, innovation proneness and attitude towards competition showed significant positive relationship with entrepreneurial behaviour.

Attitude towards self employment, innovation proneness, self confidence, credit orientation, self reliance, sociability, marks obtained in Pree-Degree, marks obtained in B.Sc. and management orientation explained 36.74 per cent of the variation in entrepreneurial behaviour of undergraduate students.

In the case of postgraduate students 49.19 per cent of variation in entrepreneurial behaviour was explained by attitude towards competition, self esteem, sociability, innovation proneness and O.G.P.A. (work experience).

Persuasiveness and innovation proneness explained 25.12 per cent of variation in entrepreneurial behaviour of unemployed graduates.

As much as 43.28 per cent of variability in entrepreneurial behaviour of male students was explained by sociability, self reliance, persuasiveness, attitude towards self employment, O.G.P.A ( work experience) management

orientation, innovation proneness and attitude towards competition.

For variables viz., self esteem, sociability, innovation proneness and credit orientation were responsible for 36.65 per cent of variation in entrepreneurial behaviour of female students.

Capital investment, availability of labour, availability of resource and infrastructural facilities were ranked high as factors influencing entrepreneurial behaviour of agricultural students as perceived by different category of respondents.

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