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**ENTREPRENEURIAL BEHAVIOUR OF FARMWOMEN IN
LIVESTOCK ENTERPRISE**

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**DEPARTMENT OF EXTENSION
VETERINARY COLLEGE AND RESEARCH INSTITUTE
NAMAKKAL -637 001.**

2001

ENTREPRENEURIAL BEHAVIOUR OF FARMWOMEN IN LIVESTOCK ENTERPRISE

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I.D.No.DPV 97001

*Thesis submitted in partial fulfilment of the
requirements for the degree of*

DOCTOR OF PHILOSOPHY
in
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to the
Tamil Nadu Veterinary and Animal Sciences University
Chennai.

DEPARTMENT OF EXTENSION
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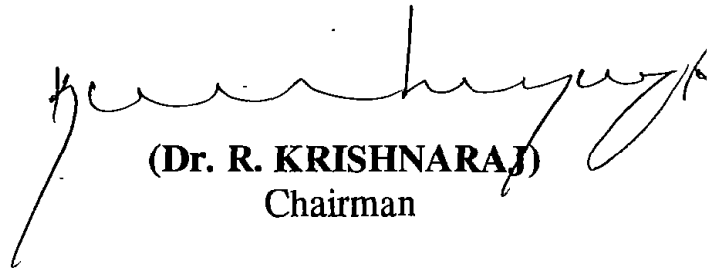
*Dedicated
to
my child*

CERTIFICATE

This is to certify that the thesis entitled "ENTREPRENEURIAL BEHAVIOUR OF FARMWOMEN IN LIVESTOCK ENTERPRISE" submitted in partial fulfilment of the requirements for the degree of DOCTOR OF PHILOSOPHY in ANIMAL HUSBANDRY EXTENSION, to the Tamil Nadu Veterinary and Animal Sciences University, Chennai is a record of bonfide research work carried out by N. NARMATHA, under my supervision and guidance and no part of this thesis has been submitted for the award of any other degree, diploma, fellowship or other similar titles or prizes and that the work has not been published in part or full in any scientific or popular journal or magazine.

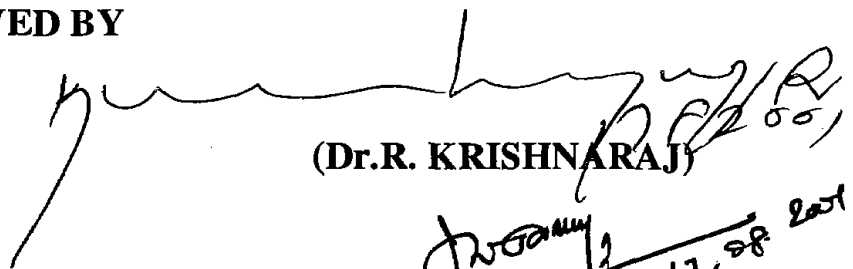
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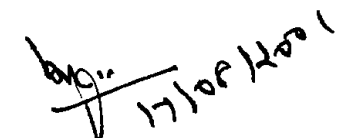
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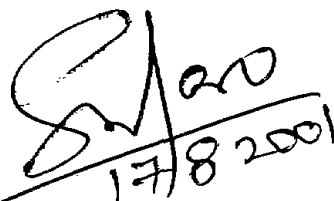

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ABSTRACT

ENTREPRENEURIAL BEHAVIOUR OF FARMWOMEN IN LIVESTOCK ENTERPRISE

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Women occupy an important place in the evolution of human society. Being always looked down with regard to the position enjoyed by men, there had always been a point of doubt on the nature of the real status those women having in the society. Commercialisation and modernisation of the economy gradually eliminated many of the avenues of employment related to women in agriculture and allied industries. And thus enabled them to find the ways of supplementing their family income. As a result of this, a section of women have emerged as potential entrepreneurs. Women are equally endowed with motivation and managerial capabilities in starting and running small enterprises. Promoting and developing such entrepreneurship among rural women require initiative, encouragement and support.

In this situation, the present study was undertaken to study the entrepreneurial behaviour of farmwomen in livestock enterprise in the Namakkal district of Tamil Nadu. The specific objectives of the study profiles of farmwomen in livestock enterprise are

measuring their entrepreneurial behaviour, identifying the relative importance of different entrepreneurial components, studying the relationship between their entrepreneurial behaviour and personal, social and economic characteristics and also identifying the constraints faced by them.

A total of 30 village panchayats in Namakkal block were selected based on the maximum number of women engaged in livestock farming. Ten farmwomen were selected from each of such 30 village panchayats randomly, thus totaling 300 respondents. The data were collected by personal interview with the farmwomen using a pre-tested interview schedule. The data collected were analysed and results interpreted.

Majority of (71 per cent) the livestock farmwomen were having moderate to very high entrepreneurial behaviour. The important components of entrepreneurial behaviour identified were risk orientation, achievement motivation, economic motivation, management orientation, innovativeness and initiativeness.

Most of the farmwomen were literate and middle aged. Nearly 85 per cent of the respondents kept livestock enterprise as a subsidiary occupation and their annual income was medium to low level. Half of the respondents belonged to medium economic status and about 77 per cent of farmwomen had medium level of scientific orientation.

Almost an equal proportion of the farmwomen possessed medium (39.67 per cent) and high (37.67 per cent) level of self-confidence. Majority of the respondents (62 per cent) had high level of closeness with livestock and industrial support system. A fairly high proportion of the respondents (62 per cent) had medium degree of competition orientation. An equal proportion of respondents (33.33 per cent) had high and low level of credit orientation. More than half of the total respondents (60 per cent) had medium level of rational orientation and majority of them (83.33 per cent) had not undergone any training related to their enterprise. About 53.34 per cent of respondent women had medium level of mass media exposure.

Out of 14 independent variables selected for the study, 10 variables namely education, annual income, economic status, scientific orientation, self-confidence, closeness with livestock and industrial support system, competition orientation, credit orientation, rational orientation and mass media exposure were found to be significantly and positively correlated with the entrepreneurial behaviour of farmwomen. Five variables namely age, scientific orientation, self-confidence, competition orientation and mass media exposure were significantly contributed to the entrepreneurial behaviour of farm women.

The most important constraint perceived by the farmwomen in livestock enterprise was the source of finance followed by marketing, labour, general / personal and technical constraints.

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Introduction

CHAPTER I

INTRODUCTION

“To awaken the people it is the women who must be awakened. Once she is on the move, the family moves, the village moves, the nation moves”

Jawaharlal Nehru

Women occupy an important place in the evolution of human society. Being always looked down with regard to the position enjoyed by men in society there had always been a point of doubt on the nature of the real status that women enjoyed in the society.

Since 1970s, a global concern for ameliorating the working ambience of women and raising their standard of living has been expressed in many ways. The United Nations Proclamation of the International Women's Year (1975) followed by the International Women's Decade (1975-1985) has been greatly responsible for raising questions around women's invisibility at global level. The United Nations Conference on the "Status of Women" held in Kenya in 1985, emphasised that the development of society requires the full participation by all sections of population and women in particular.

Gustar Geigar, the Swedish sociologist wrote that the position of women in society provides an exact measure of the development of society. In India, twenty-five years back, our late Prime Minister Mrs. Indira Gandhi stressed that women have trailed behind men in almost all sectors and generating opportunities for their independent means of employment could only raise their status. But as in any other country, the problems a woman faces have specific colouring depending on the socio - economic milieu in which she has been nurtured and moulded.

Commercialisation and modernisation of the economy gradually eliminated many of the avenues of employment related to women in agriculture and allied activities and thus enabled them to find the ways of supplementing their family income. As a result a section of rural women have emerged as potential entrepreneurs. This development is of significant importance in Indian society. It is since the last decade that the women have started emerging on the business scene and some have achieved remarkable success too. Although, their risk had been full of challenges, they steered the prejudices, family opposition, sneering and cynical remarks of co-workers and ultimately established themselves as independent entrepreneurs.

Entrepreneurship development among women may be looked at from two angles. One is to create the environment needed for healthy and sound entrepreneurship, and the other is to organise more and more national motivational campaigns for the woman entrepreneur when she takes on these challenging roles and wants to adjust her personality needs, family and social life and economic independence. To a large majority of Indian women, the highest motivation for work is indeed sheer economic necessity. Among the educated and highly educated, the strongest motivation for starting their own business is the desire for independence, satisfaction and achievement rather than economic and social compulsion (Singh and Singh, 1971).

Schumpeter (1934) proposed the theory of economic development wherein he visualised the entrepreneur as the key element in economic development by virtue of his role in introducing innovations. According to him, 'an entrepreneur is one who starts an industry / business / trade and (or) other services, undertakes risk, bears uncertainty and performs the other managerial functions of decision making and co-ordination'. He also stated that entrepreneurs are job creators instead of job seekers.

Entrepreneurship plays a critical role in the growth of our country, which has abundance of natural, and human resources. Besides being the vehicle of agricultural and animal husbandry development, entrepreneurship can solve acute problems like unemployment, concentration of wealth in few selected hands, imbalance in regional

development, increasing wastage of youth vigour in destructive activities etc. Nafziger (1971) remarked that entrepreneurship and other higher level human skills are key variables that link socio-cultural milieu with the rate of economic development.

Ashok (1984) rightly stated that peasant oriented occupations promote the national economy and these occupations are becoming more complex and complicated and therefore, development of entrepreneurial ability is a key to face these problems. All these factors call for development of entrepreneurship on the part of farmers to survive and succeed in the present day world of competition.

Realising the importance of entrepreneurship, Forster (1953) described farming as a business and identified the farmer as an entrepreneur. Sethy (1982) reported that the farmers were having entrepreneurial characteristics in their adoption of improved farm technology. De (1985) concluded that to conduct a farm as an enterprise or business, the identity of person must be changed from a farmer to farm business operator or entrepreneur. Harper and Vyakaranam (1988) and Singh and Krishna (1994) considered farmers also as entrepreneurs.

Need for the study

In developing countries, it is observed that the problem of unemployment and under employment is greater for women than men. Men move out of the agricultural employment more easily than women. Moreover, increasing the efficiency of agriculture has widely shown to have adverse effect on the employment of women due to realignment of tasks in the sexual division of labour. Most rural women's work remains outside the cash sector which so far has debarred their economic activities from being quantified and included in national income statistics.

Lack of entrepreneurship and training are the major causes for poor progress in the economic activities in the right lines. The need for entrepreneurship development was first felt in 1950's. Efforts to promote small industries in rural areas have until now

been directed towards men only. Women are equally endowed with motivation and managerial capabilities in starting and running small enterprises when they are located in their own homes or communities. Promoting and developing such entrepreneurship among rural women require initiative, encouragement and support from the development agencies. The results of the present study will help in evolving strategies, which in turn will help to improve entrepreneurial abilities of rural women.

The dogging of their personal, social and economic variables in relation to their entrepreneurial behaviour, this study would help in defining certain important traits of business which in turn could either be improved upon the present day entrepreneurs or can be transmitted to new and prospective ones through teaching and training. Thus, keeping in view the above said factors the present study was undertaken with the following specific objectives:

1. To measure the entrepreneurial behaviour of farmwomen in livestock enterprise.
2. To identify the relative importance of different components of the entrepreneurial behaviour
3. To study the relationship between entrepreneurial behaviour and personal, social and economic characteristics of farmwomen in livestock enterprise.
4. To identify the constraints faced by the farmwomen entrepreneurs and to suggest strategies for entrepreneurship development.

Scope of the study

In a fast developing country like India, the forces of commercialisation, modernisation and industrialisation are actively operating and transforming the traditional modes of production into modern capitalistic enterprises. The study aimed at understanding the entrepreneurial development among women and highlighting their existing status and contribution to national economy. A close look at their personal history, motivational forces, entrepreneurial performances, communication systems and the efficiency of linkages and constraints faced by them at

various stages would certainly help in improving their own efficiency and standard as well as help the national authorities in streamlining the future strategies of the greater economic responsibility of our country.

Limitations of the study

As this study formed a part of the doctorate degree programme, the time and other resources at the disposal of the researcher were limited. These limitations determined the restricted selection of district and also the sample size. The identification and extraction of information from the respondents were carried out with much concerted efforts by the researcher, since the women respondents were hesitant to answer personal and / or complicated questions. Here, the researcher had to depend on information which the respondents gave from their memory (recall data) as in the case of cost of expenditure, income, labour intake and other details. By the very nature of things, some degree of error would have crept into such data. However, every effort was made to ensure that the data provided by the respondents are as reliable as possible.

Review of Literature

CHAPTER II

REVIEW OF LITERATURE

The objective of this chapter is to give an orientation to the concepts pertaining to entrepreneurial behaviour and livestock enterprise and to present the different research findings available in the area of the study. The literature is presented under the following heads:

- 2.1 Entrepreneurs and entrepreneurship – a conceptual orientation
- 2.2 Concept of entrepreneurial behaviour
- 2.3 Components of entrepreneurial behaviour
- 2.4 Level of entrepreneurial behaviour
- 2.5 Personal, social and economic characteristics influencing entrepreneurial behaviour
- 2.6 Constraints of entrepreneurs

2.1 ENTREPRENEURS AND ENTREPRENEURSHIP – A CONCEPTUAL ORIENTATION

2.1.1 Entrepreneur

The word entrepreneur appeared for the first time in the French language 'Entreprendre' meaning 'to undertake'. In France, in sixteenth century, a leader of the military expedition was referred to as entrepreneur.

✓ Schumpeter (1934) defined entrepreneur as an innovator who works out new combinations of the factors of production and distribution.

✓ Forster (1953) described farming as a business and identified farmer also as an entrepreneur.

✓ McClelland (1961) pointed out that the man who organises the firm and / or increases its productive capacity is an entrepreneur.

✓ Hagen (1964) described, the entrepreneur as an economic man who tries to maximise his profits by innovations.

✓ Florence (1969) opined that an entrepreneur is a person who makes prime decisions.

Joshi and Kapur (1973) described farm entrepreneur as the person (can be group of persons also), who thinks of, organises and operates the business and is responsible for the results.

Taylor and McMillan (1973) indicated that the entrepreneur is 'out oriented' towards changing and enlarging the firm. He is an imaginative creator of new possibilities and willing to take risk under conditions of great uncertainty.

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

Herdero (1979) described agricultural entrepreneur as a person who introduces changes, which directly or indirectly lead to higher agricultural output.

Carland *et al.* (1984) posited that an entrepreneur should be one who established a business for the purpose of profit and growth, who was characterised by innovative behaviour and who employed strategic management practices.

Sharma (1985) defined an entrepreneur as one who detects and evaluates the new situation in his environment and directs the making of adjustments in the economic system, as he deems necessary.

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

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

Dixit (1988) regarded a true entrepreneur as one who germinates the concept, takes initiative, seizes the opportunity, bears the risks, promotes the organization and manages it inspite of odds to achieve the set goals.

Hamilton (1990) opined that entrepreneurs were risk takers and rational individuals who considered their knowledge and skills as dramatic risk reduction elements.

Rahman and Kulshrestha (1990) defined entrepreneurs as persons who initiate, organise, manage and control the affairs of business units and combine the factors of production to supply goods and services, whether the business pertains to agriculture, industry, trade or professions.

Porchezian (1991) defined farm entrepreneur as one who maintains one or more enterprises like poultry, dairy and sericulture apart from the main occupation of crop husbandry.

Khan (1992) stated that entrepreneurs are the men of skills, experiences, dexterity, expertise and flair.

Mohiuddin (1993) defined an entrepreneur, as one who undertakes to organize, own and run an enterprise.

Narendrakumar and Jayachandran (1994) defined an entrepreneur as a person who senses an opportunity for economic gain in the socio-economic spaces around him and initiates activity leading to production through interaction of men, machine, materials and money.

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

According to Desai (1995), an entrepreneur is one who can see possibilities in a given situation, where others see none and has the patience to workout the idea into a scheme to which financial support can be provided.

Goswami (1996) defined an entrepreneur as one who wants to set up a commercial venture on his own with determination, zeal, enthusiasm and with basic knowledge of the business he wants to set up and above all he is willing to take risks on his own.

According to Scott (1997) an entrepreneur is one who takes risks to initiate business activity.

Manimala (1998) stated that the entrepreneurs make use of their personal and professional networks.

Ramana (1999) defined entrepreneurs as those people who work for themselves.

From the analysis of various definitions of the term entrepreneur, it could be possible to consider livestock farmwomen also as entrepreneurs. In the present study, the term livestock farmwoman is defined as a woman farm operator who maintains one or more enterprises like poultry, dairy, sheep, goat etc.

2.1.2 Entrepreneurship

Entrepreneurship is a purposeful behavioural adaptation launched for initiating, promoting and maintaining economic activities for the production and mobilisation of monetary resources. The emergence of entrepreneurship depends upon economic, social, cultural, religious and psychological factors.

garwal (1975) defined entrepreneurship as the ability to identify the resources and 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 that the entrepreneurs possess and those that they perform in relation to expansion of their units.

Rao and Mehta (1978) described entrepreneurship as a 'creative' and 'innovative' response to environment.

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.

Schultz (1980) defined entrepreneurship as the ability to deal with its equilibrium rather than the ability to deal with uncertainty.

Stevenson *et al.* (1985) defined entrepreneurship as the process of creating value by pulling together a unique package of resources to exploit an opportunity.

Watkins and Allen (1987) defined entrepreneurship as 'a characteristic or a 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.

Timmons (1989) defined entrepreneurship as the ability to create and build something from practically nothing. It is initiating, doing, achieving and building an enterprise or organisation.

Khan (1992) stated that entrepreneurship is the basic business acumen of a successful entrepreneur.

Vijayalakshmi (1992) reported that entrepreneurship is the ability to co-ordinate and organise, manage and maintain and reap the best out of even the worst situations.

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

Desai (1995) described entrepreneurship as the persons' propensity to take calculated risks with confidence to achieve a pre-determined business or industrial objective.

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.

Banerjee and Talukdar (1997a) defined women entrepreneurship as the extent of qualitative and innovative activities carried out by a woman entrepreneur in her respective enterprise to increase production spontaneously, where her activities are also a manifestation of internal mental events and processes.

Manimekalai (1998) opined that entrepreneurship is the self-employed industrial activity or non-farm activity as an alternative to agricultural employment.

According to Ramana (1999) entrepreneurship is a purposeful activity indulged in initiating, promoting and maintaining economic activities for the production and distribution of wealth.

From the above explanations it could be inferred that entrepreneurship is the basic and purposeful activity required for any successful entrepreneur.

2.2 CONCEPT OF ENTREPRENEURIAL BEHAVIOUR

Minzberg (1976) stated that entrepreneurial behaviour is characterised by active search, expansionist outlook and decision making.

Bruno and Tyebjee (1982) defined entrepreneurial behaviour as a function of the characteristics of the person and the environment.

Raghavacharyulu (1983) also had defined entrepreneurial behaviour as the degree to which a person strives to maximise his profits by making creative and innovative response to the environment.

Singh (1985) quoted the sociologist's view that entrepreneurial behaviour is a function of social structure, which can be influenced by the economic and social incentives inherent in it.

According to Bird (1989), entrepreneurial behaviour is opportunistic, value-driven, value-adding, risk accepting, creative activity where ideas take the form of organisational birth, growth or transformation.

Porchezian (1991) defined entrepreneurial behaviour as the degree to which a farmer strives to maximise his profits by making a creative and innovative response to the environment, through diversification of enterprises.

The activity of an individual to decide for adopting certain enterprise to make profit was regarded as entrepreneurial behaviour (Patel and Sanoria, 1997).

Paul (1998) revealed that entrepreneurial behaviour as the degree to which a farmer ready to take risk and adopt new technologies and also more innovativeness and leadership abilities.

From the above explanations it could be inferred that entrepreneurial behaviour is the ability of an entrepreneur to take risk, make wise decisions and management of resources towards maximising the profit of the enterprise.

2.3 COMPONENTS OF ENTREPRENEURIAL BEHAVIOUR

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

Javillionar and Peters (1973) listed three components of entrepreneurial behaviour viz. risk taking ability, novel or energetic instrumental activity and individual responsibility.

Mathai (1978) has listed technical risks, financial risks, 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) suggested psychological factors in entrepreneurship viz. need ¹⁴ for achievement, need for influence, social consciousness, personal efficacy and self image, goal setting tendency, locus of resources, initiative, innovativeness, tendency to take realistic risk, sense of personal responsibility, tendency to take feedback and dignity of labour.

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

Nandapurkar (1982) developed an objective instrument to measure 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.

Raghavacharyulu (1983) conceived entrepreneurial behaviour as a cumulation of seven components viz. innovation proneness, decision making, achievement motivation, assistance of management services, risk taking ability, level of aspiration and locus of control.

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

Pantulu (1989) classified the contributing factors that tend to influence entrepreneurship into socio-demographic variables, economic variables, variables of systematic linkage, lateral characteristics and bio-characteristics of entrepreneurs.

Rajagopalan (1989) found out the psychological factors that contributed to entrepreneurial development as need for achievement through self study, goal setting and

interpersonal support, keen interest in situations involving moderate risks, desire for taking personal responsibility, concrete measures of task performance, anticipation of future possibilities, organisational skills, and energetic or novel instrumental activity.

Muthayya and Loganathan (1990) found that self-confidence, internal locus of control, sociability and self-actualisation had some bearing on entrepreneurship.

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

Perumal *et al.* (1990) observed that economic orientation and risk orientation were important factors influencing the entrepreneurial venture of women entrepreneurs.

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 the members of the society in which he operated.

Kokate and Nand (1991) studied the entrepreneurial behaviour of small and marginal potato growers. Six dimensions viz. innovativeness, decision making, risk orientation, economic motivation, attitude towards potato cultivation and knowledge were considered to measure entrepreneurial behaviour.

Porchezian (1991) enumerated the important components of entrepreneurial behaviour of small farmers viz. locus of control, assistance of management services, level of aspiration, innovative proneness, decision making, achievement motivation and risk taking ability.

Muthukrishnan (1993) expressed that entrepreneurial requisites were to be achieved primarily through motivation skills, workable planning, the know-how in the area engaged and the strength to mobilise finance needed to sustain the growth.

Singh and Krishna (1994) used an objective instrument to measure the entrepreneurial behaviour of cotton growers by taking ten components viz. innovativeness, decision making, achievement motivation, knowledge possession, information-seeking, risk taking ability, ability to coordinate, use of management services, leadership ability and cosmopolitaness.

Jayalekshmi (1996) identified important components of entrepreneurial behaviour of rural women as economic motivation, risk taking ability, decision making ability, achievement motivation, management orientation, competition orientation, initiative and self-confidence.

Banerjee and Talukdar (1997b) selected 13 components to measure extent of entrepreneurship and those components were knowledge about the enterprise, attitude towards the enterprise, reason for venturing into enterprise, market strategy, forward integration, need for achievement, need for influencing others, need for independence, risk taking calculation, problem recognition ability, managerial ability, decision making ability and position of enterprise in life.

Vijaya and Kamalanabhan (1998) stated that the single most important causative factor in the rise of entrepreneurship was achievement motivation.

Senthilvinayagam (1999) found that the important components of entrepreneurial behaviour of agri-business operators were innovation-proneness, decision making, achievement motivation, risk orientation and leadership ability.

From the above reviews, it could be noted that an entrepreneur is expected to have various entrepreneurial traits. The preceding reviews in general indicates that to measure the entrepreneurial behaviour of entrepreneurs, components such as innovation-proneness, decision making ability, achievement motivation, risk orientation, economic motivation, entrepreneurial knowledge, management orientation, leadership ability,

assistance of management services, personal efficacy and leadership ability are most important.

2.4 LEVEL OF ENTREPRENEURIAL BEHAVIOUR

Nandapurkar (1982) concluded that participant small farmers in animal husbandry activities had high entrepreneurial behaviour, which was significantly superior to that of non-participant small farmers.

Venkataramaiah (1993) observed that the participant farmers under animal husbandry programme had significantly higher entrepreneurial behaviour with a score of 55.82 than other programmes.

Pandya (1996) stated that a great majority (84 per cent) of sugarcane growers were having moderate entrepreneurial behaviour i.e. 70 to 87 score, while eight per cent of them were found in both the low and high entrepreneurship.

Pandya (1997) indicated that majority of inland fisherman (64.08 per cent) belonged to the category of medium entrepreneurial behaviour, followed by 18.44 and 17.48 per cent belonged to low and high entrepreneurial behaviour, respectively.

Porchezian *et al.*(1998) inferred that most of the farmers had high (66 per cent) entrepreneurial behaviour followed by medium (23 per cent) level of entrepreneurial behaviour.

Senthilvinayagam (1999) found that 53.75 per cent of agri-business entrepreneurs had high level of entrepreneurial behaviour followed by low (30 per cent) and medium (16.25 per cent) levels.

2.5 PERSONAL, SOCIAL AND ECONOMIC CHARACTERISTICS INFLUENCING ENTREPRENEURIAL BEHAVIOUR

2.5.1 Age

Nandapurkar (1982) and Jayalekshmi (1996) reported that age was not significantly related with the entrepreneurial behaviour.

Raghavacharyulu (1983) and Porchezian (1991) reported that age had a positive and significant relationship with the entrepreneurial behaviour.

Raghavacharyulu (1983) and Taori (1995) observed that majority of the entrepreneurs were belonged to adult category.

Singh (1985) found that age distribution of entrepreneurs was so even that it hardly offered any significant trend in entrepreneurship formation.

Influence of age on entrepreneurial behaviour was reported by Singh and Gupta (1985), Singh *et al.* (1986), Naik *et al.* (1990) and Singh (1992).

2.5.2 Education

Murthy (1983) concluded that education is complementary and not compulsory for entrepreneurship.

Education has been reported as a crucial factor for developing modern entrepreneurship and it accelerated the entrepreneurial spirit (Shah, 1985; Singh and Gupta, 1985 and Singh, 1992).

Sharma (1985) found that there was a positive relationship existing between the education level and performance of the entrepreneurs. The similar finding was reported by De (1986), George *et al.* (1987), Kokate and Nand (1991), Sarmah and Singh (1994) and Jayalekshmi (1996)

Singh (1985), in an intensive empirical study of entrepreneurship formation reported that the level of educational background played a significant role in entrepreneurship formation.

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

Nadkarni (1988) observed no firm relationship between the level of education and the degree of success in business.

Khanka (1989) found that willingness to opt for the entrepreneurial career increases with more educational qualifications.

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

Porchezian (1991) found that educational status was not related with the entrepreneurial behaviour of farmers.

Singh (1992) concluded that education and entrepreneurial knowledge were significantly associated with entrepreneurial performance.

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

2.5.3 Occupational status

Raghavacharyulu (1983) revealed a positive and significant relationship between the entrepreneurial behaviour of farmers and their occupation.

Rao *et al.* (1989) concluded that non-farm occupations provided year round employment and significant income to small and marginal farmers.

Jayalekshmi (1996) observed that occupation had no significant relationship with the entrepreneurial behaviour.

The above reviews show that the relationship between occupational status and entrepreneurial behaviour is not consistent.

2.5.4 Annual income

Nandapurkar (1982) reported that annual income of farmers was positively and significantly related with their entrepreneurial behaviour. The similar finding was also reported by Raghavacharyulu (1983), Kokate and Nand (1991), Porchezian (1991) and Banerjee and Talukdar (1997b)

While studying the entrepreneurship in industry, Rao (1986) found that educational and income levels were important factors in motivating entrepreneurship. George *et al.* (1987) suggested that off farm income, a correlate of entrepreneurship called for a collaboration effort to be made by the extension agency with credit institution.

2.5.5 Economic status

De (1986) found positive and significant association of entrepreneurial characteristics of farmers with their socio-economic status.

Wheeler and Ortmann (1990) suggested that determining factors relating to success of household enterprise were human capital endowments and economic status of the household.

2.5.6 Scientific orientation

Gowda (1978) and Porchezian (1991) reported a positive and significant relation between the level of scientific farming and the entrepreneurial behavioural characteristics of farmers.

2.5.7 Vocational diversification

Chandramouleeswaran (1987) reported that technological diversification was observed in the 11 combinations among the selected small farmers. Only six per cent had grown crops alone and majority (52 per cent) had gone for dairying in addition to crops. The minimum average income was only Rs.10, 550/- (crops alone) whereas the maximum was Rs.65, 643/- (crops + dairy + floriculture). Triple technological mix in various combinations was followed by 36 per cent of respondents, while only two per cent had gone for combinations of four enterprises.

Jitely (1988) observed that diversification of agriculture was the best remedy for a steady trend in agricultural production.

A positive and significant relationship was observed between the entrepreneurial behaviour and vocational diversification (Porchezian, 1991).

Sadangi (1991) suggested that farm youth who are fully employed in farming and possessed more area under cash crops can very well diversify in the area of agro-industry, dairy, poultry, sheep and goat rearing to supplement their income. He also concluded that diversifiers preferred more calculated risk than the non-diversifiers.

Zahir (1994) found that almost three-fourths of the entrepreneurs were manufacturing more than two products and 63 per cent of the small scale industrial respondents had diversified after initial production.

2.5.8 Self-confidence

Loganathan (1988), Sharma (1988), Birley (1989) Naik *et al.* (1990) and Singh (1992) observed that confidence of the entrepreneur had a significant association with entrepreneurial development and performance. Muthayya and Loganathan (1990) reported that self-confidence, internal locus of control and self-actualisation was high among the entrepreneurs.

2.5.9 Closeness with livestock and industrial support system

Basu and Moulik (1979) stated that support system for developing entrepreneurial capabilities assume considerable importance.

Nandapurkar (1982) and Raghavacharyulu (1983) observed that contact with extension agency was positively and significantly related to the entrepreneurial behaviour.

Sreekumar (1985) found a positive relationship between management orientation and extension agency contact.

Singh (1985) observed that the entrepreneurs had wider organisational exposure during the formation of an entrepreneur.

Akhouri and Mishra (1990) reported that support systems help the entrepreneurs in all their activities to run their enterprise successfully.

Anantharman (1991) found that closeness with agricultural support system significantly contributed to managerial efficiency of the farmers.

2.5.10 Competition orientation

Rao and Mehta (1978) found competition and collaboration as one of the factors that influenced entrepreneurship.

Badachickar (1985) stated that competition orientation of farmers had a positive relationship with management orientation.

Gregg (1985) and Naik *et al.* (1990) reported that the entrepreneurial trait, 'competition' had significant association with the entrepreneurial development and performance.

Singh (1992) inferred that majority of the entrepreneurs possessed medium level of competition spirit.

2.5.11 Credit orientation

Mishra and Sinha (1980) reported that credit orientation was significantly correlated with the technology adopted by the farm entrepreneurs.

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

Majority of the entrepreneurs possessed low degree of credit orientation. (Shah, 1985; Akhouri, 1990; Jyotibha, 1990 and Singh 1992)

2.5.12 Rational orientation

Hobbs (1964) measured rationality on the basis of economic productivity of the entrepreneurs.

Supe (1969) inferred that the act of an individual is considered rational to the extent to which he justifies his selection of most efficient means, from among the available alternatives, on the basis of scientific criteria for achieving maximum economic ends.

Rajendran (1992) observed that rational orientation did not establish significant relationship with the utilisation of the agricultural enterprises.

2.5.13 Training

Rao (1983) studied the problems of technically trained entrepreneurs and reported that they showed a higher level of entrepreneurship than the entrepreneurs with no such trainings.

Training on entrepreneurial development programmes helped a person to become aware of such qualities present in him and developed him constructively (Harper, 1984; Shah, 1985; Sharma, 1988; Rao and Alagendhi, 1989 and Jyotibha, 1990).

Akhouri (1990) described that first generation of entrepreneurs required training on entrepreneurial quality, capability of enterprise launching, and ability for enterprise management, social responsibility and entrepreneurial discipline.

Natarajan and Thenmozhy (1991) concluded that well planned and properly conducted Entrepreneurial Development Programmes (EDP) would help women to emerge as successful entrepreneurs.

Singh (1992) observed that most of the entrepreneurs (67.00 per cent) did not avail the opportunity of getting any kind of entrepreneurial training. He further observed that training showed no significant impact on entrepreneurial performance which otherwise was quite prominent. The same was reported by Vitz (1987) and Takshak (1990).

While studying the entrepreneurship in small scale subsistence and commercial agriculture, Fraser and Antrobus (1995) indicated that the provision of training programme, marketing facilities, government sponsored irrigation projects and the farmer support programmes were the necessary ingredients for successful entrepreneurship.

2.5.14 Mass media exposure

Nandapurkar (1982) observed a positive and significant relationship between media participation and entrepreneurial behaviour of farmers.

Raghavacharyulu (1983) reported that mass media contact influenced the entrepreneurial behaviour of small farmers.

Kokate and Nand (1991) found that use of communication sources had positive and significant relationship with entrepreneurial behaviour.

Porchezian (1991) reported that mass media contact was non-significantly related with the entrepreneurial behaviour of farmers.

Jayalekshmi (1996) found a positive and significant relationship between the mass media contact and entrepreneurial behaviour of rural women.

2.6 CONSTRAINTS OF ENTREPRENEURS

S.No	Constraints	Author and Year
1.	Financial	Sharma (1985), Nadkarni (1988), Khanka (1989), Takshak (1990), Vidyulata (1990), Prantilla (1992), Singh (1992), Srivastava (1994), Kumar (1995), Venkataramaiah and Manjula (1996), Jayalekshmi <i>et al.</i> (1997) and Sundaram (1998).
2.	Marketing	Hassim <i>et al.</i> (1986), Nadkarni (1988), Khanka (1989), Takshak (1990), Vidyulata (1990), APO (1992), Prantilla (1992), Singh (1992), Srivastava (1994), Kumar (1995), Govindappa and Halasagi (1996), Venkataramaiah and Manjula (1996), Jayalekshmi <i>et al.</i> (1997) and Sundaram (1998).
3.	Labour	Harper (1984), Sharma (1985), Hassim <i>et al.</i> (1986), APO (1992), Srivastava (1994) and Kumar (1995).
4.	General / personal	Hassim <i>et al.</i> (1986), APO (1992), Singh (1992), Sreen and Sreen (1992), Srivastava (1994), Kumar (1995), Halasagi (1996) and Venkataramaiah and Manjula (1996).
5.	Technical	Vitz (1987), Nadkarni (1988), APO (1992), Prantilla (1992), Sreen and Sreen (1992), Srivastava (1994), Kumar (1995) and Venkataramaiah and Manjula (1996).

Research Methodology

CHAPTER III

RESEARCH METHODOLOGY

In this chapter, the methods and procedures employed in this study for data collection, data analysis and interpretation are presented under the following *sub heads*:

- 3.1 Locale of the study
- 3.2 Selection, operationalisation and measurement of dependent variables
- 3.3 Selection, operationalisation and measurement of independent variables
- 3.4 Constraints perceived by the livestock farmwomen
- 3.5 Procedure employed in data collection
- 3.6 Statistical tools used
- 3.7 Hypothesis of the study

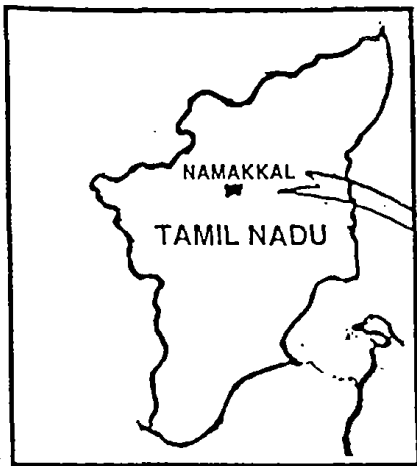
3.1 LOCALE OF THE STUDY

3.1.1 Selection of district and taluk

Namakkal taluk of Namakkal district, in Tamil Nadu state was selected for this study as it ranks first in livestock population and engaging maximum number of farmers in the livestock enterprise (Annexure I).

3.1.2 Selection of block

Of the fifteen blocks in Namakkal taluk, Namakkal block (Fig.1) was selected as it has the maximum number of livestock farmers and the maximum livestock *and* poultry population (Annexure II).



NAMAKKAL PANCHAYAT UNION

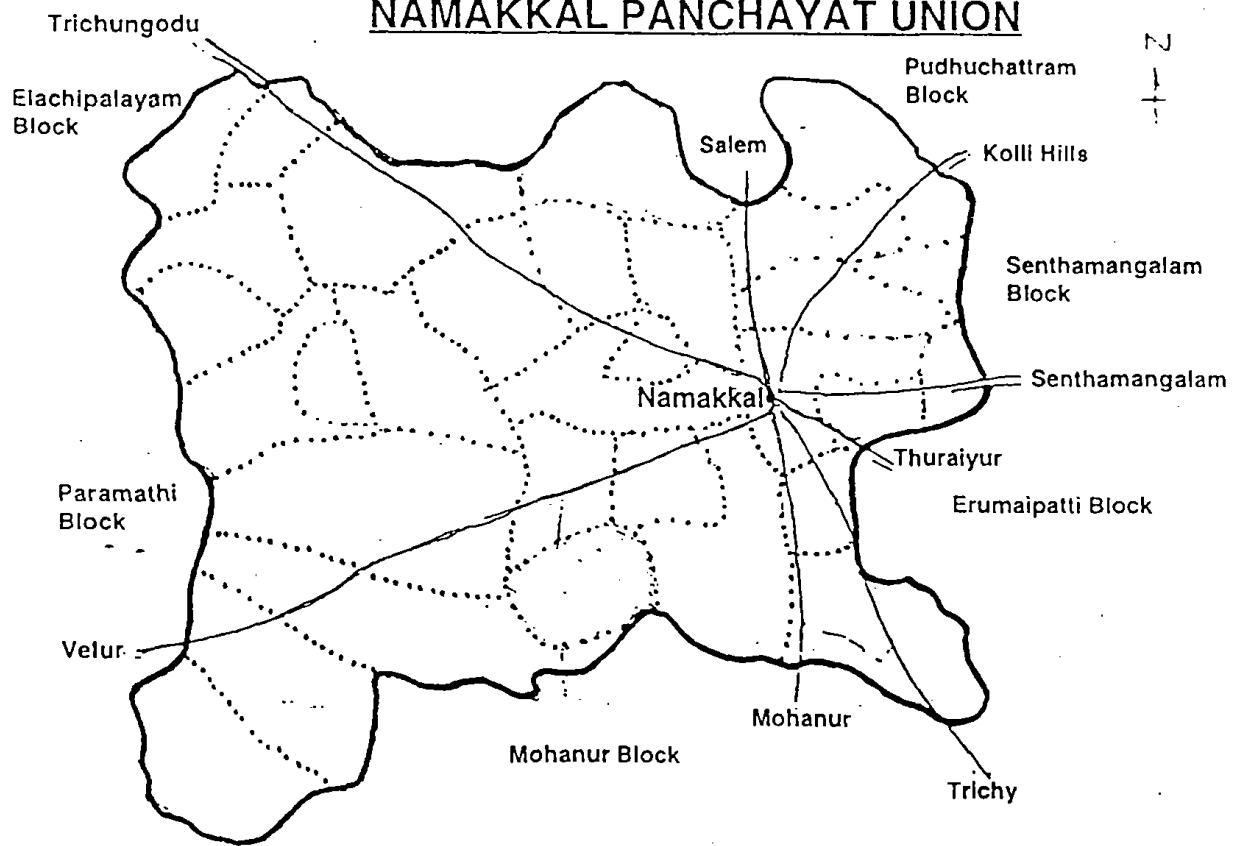


Fig 1. Map depicting the selected area

3.1.3 Selection of village panchayats

Namakkal block consists of 34 village panchayats. A list of village panchayats was prepared by arranging them in descending order based on number of livestock farmers. From this, the top 30 village panchayats were selected and remaining four villages were deleted as they had only negligible number of farmers (Annexure III).

3.1.4 Selection of the respondents

One of the objectives of this study was to find and analyse the entrepreneurial behaviour of livestock farmwomen. The following criteria were used to define the population of such respondents of this study.

- a. The respondent must possess at least one livestock enterprise viz. dairy, sheep, goat and poultry.
- b. They should have had livestock enterprise for at least five consecutive years at the time of data collection.
- c. They should have had the enterprise with the main intention of marketing the produce and should have earmarked at least three-fourths of the proportion of livestock produces for the market.

Keeping these three criteria in view, a list of livestock farmwomen in each selected panchayat was prepared in consultation with field level extension personnel. Ten farmwomen were selected from each of 30 panchayats randomly. Thus, a sample of 300 livestock farmwomen was selected for this study.

3.1.5 Description of the study area

The district is bounded by Salem on the North, Karur on the South, Perambalur and Salem on the East and Erode on the West. The district consists of 4 taluks, comprising 15 blocks, with 436 villages. The district has predominantly rainfed land

with geographical area of 3,49,671 ha. River Cauvery passes through this district in linear stretch facilitating canal irrigation. The other main source is well irrigation.

Most part of the district falls under North-western agro-climatic zone except Tiruchengode taluk which falls under western zone. The Kolli hills are a hilly terrain, and a few isolated hills and ridges come under hilly zones. Hard toiled labour, a force behind the rapid development of this district in a short span and promoted it in all spheres, are main assets.

Animal husbandry activities in the yesteryears were mainly dairy farming with each household owning at least one animal for milk production and sometimes with sheep and goat. In the selected district poultry farming is well developed in this decade and it has surpassed all other activities including agriculture and industries.

Agricultural activities in this district comprise mostly of cultivation of cash crops such as groundnut and tapioca in rainfed areas, and paddy, sugarcane and banana in canal irrigated areas. Latest practice is setting up of horticultural farms by drip irrigation. Coconut, mango, orange and guava plantations in plains have raised the hopes in horticultural front. The farmers in Kolli hills produce horticultural crops such as pine apple, banana, jackfruit besides herbal and medicinal plants, which have high demand for exports. Plantation crops like coffee and spices such as pepper, coriander are on the verge of up staging.

On the industrial side, cotton textiles, silk and allied industries are providing job opportunities to the people. Power looms replaced traditional weaving in most parts of this district. Truck operations and liquified petroleum gas transport are done by transport operators in this district who almost cater to more than 50 per cent of the country's need. Lorry bodybuilding is one of the important activities in this district due to availability of high technical expertise and cheap labour.

3.2 SELECTION, OPERATIONALISATION AND MEASUREMENT OF DEPENDENT VARIABLES

3.2.1 Dependent variable

Entrepreneurial behaviour was taken as the dependent variable for the study, which was measured by developing an index, called Entrepreneurial Behaviour Index (EBI).

3.2.1.1 Definition and measurement of entrepreneurial behaviour

Through review of past studies and in consultation with experts in the field of animal husbandry, 17 components related to entrepreneurial behaviour of livestock farmwomen were identified (Appendix – Ia).

Based on these identified components, entrepreneurial behaviour was operationally defined as the ability of livestock farmwomen to take risk, decisions and manage resources towards maximising the profit of her enterprise with an urge to excel others.

The list of identified components was sent to the qualified and experienced faculty members in the discipline of Animal husbandry and Agricultural Extension almost in all states of India to judge the relevancy and exhaustiveness of the selected components to be included in the final schedule.

The judges were requested to critically go through the list of components and indicate the relevancy of these components in measuring the entrepreneurial behaviour. They were also requested to suggest any other component which they considered relevant to the study and were asked to rate these on a five point continuum ranging from most relevant, more relevant, relevant, less relevant and least relevant with weightages of

5,4,3,2 and 1 respectively. From a total of 65 judges selected for rating, responses could be obtained only from 37 judges.

In the present study, out of 17 identified components 10 were selected based on the relevancy rating score. Components with relevancy score above the mean score were selected to measure the entrepreneurial behaviour of farmwomen in livestock enterprise. The components selected were innovativeness, decision making, achievement motivation, risk orientation, economic motivation, entrepreneurial knowledge, management orientation, level of aspiration, leadership ability and initiativeness. The components with their respective relevancy weightage score are given in Table 1.

TABLE 1
IDENTIFIED ENTREPRENEURIAL BEHAVIOUR COMPONENTS WITH
THEIR RELEVANCY WEIGHTAGE SCORE

S.No.	Identified components	Relevancy weightage score
1.	Decision making	4.76*
2.	Innovativeness	4.55*
3.	Risk orientation	4.49*
4.	Level of aspiration	4.48*
5.	Achievement motivation	4.45*
6.	Entrepreneurial knowledge	4.33*
7.	Economic motivation	4.24*
8.	Initiativeness	4.09*
9.	Management orientation	4.06*
10.	Leadership ability	3.94*
11.	Personal efficacy	3.72
12.	Cosmopolitaness	3.63
13.	Self concept	3.45
14.	Information seeking behaviour	3.27
15.	Self reliance	3.03
16.	Ability to co-ordinate livestock activities	3.01
17.	Locus of control	2.45

* Components selected for the study.

3.2.1.2 Operationalisation and measurement of identified components of EBI 33

a) Innovativeness

Innovativeness was operationalised, as the behavioural pattern of the livestock farmwomen who showed interest and desire to seek changes in her enterprise and her willingness to introduce such changes in her livestock activities when found practical and feasible.

Innovativeness was measured by using a 'self-rating scale' developed by (Moulik 1965). This scale consisted of three sets of statements. The respondents were asked to choose the one amongst three sets of statements, which most accurately portrayed 'most like' and also the one that portrayed 'least like' from each set. The respondents 'most like' and 'least like' choices for each statement were obtained. The three sets in each statement were given the weightage of 3,2 and 1 denoting high, medium and low degree of innovativeness.

The ratio of weightage of the most liked statements to the least liked statements in three sets was worked out which gave the respondent self rating score for innovativeness.

b) Decision making

Decision making ability was operationalised as the degree to which the livestock farmwomen justifies her selection of most efficient means from among the available alternatives on the basis of scientific criteria for achieving maximum economic profits (Nandapurkar, 1982). This was measured using the scale developed by Nandapurkar (1982) with slight modifications.

The scale consisted of ten items. The response categories for each item were 'not considered, considered after consultation with others and decision taken independently' for which the scores assigned were 1,2 and 3 respectively. By summing up the scores

over the ten items, the decision making ability score for a respondent was obtained. The range of the score was from 1 to 30.

c) Achievement motivation

Achievement motivation was operationalised as the striving of the respondents to do a work with a standard of excellence, which may be task related, self-related or other related. It was measured with the help of the scale developed by Desai (1981) and followed by Anantharaman (1991) and Senthilvinayagam (1999). The scale consisted of five incomplete sentences, each having three choices for the respondents to choose from the answers felt as appropriate for them. One of the choices indicated high achievement motivation compared with other two. The respondents who gave the proper choice were assigned a score of one and zero score for other two choices. The score obtained for the choices were summed up to get the respondents achievement motivation score. The score ranged from 0 to 5.

d) Risk orientation

Risk orientation was operationalised as the degree to which the respondent is oriented towards risk and uncertainty and exhibits courage to face problems of risk. The scale developed by Supe (1969) and followed by Senthilvinayagam (1999) was used to measure the risk orientation of the respondents. The scale consisted of six statements, of which one statement was negative and the rest positive. The respondents were scored on a five point continuum with scores 4,3,2,1 and 0 for their responses strongly agree, agree, undecided, disagree and strongly disagree respectively. However, the scores for the negative item will be reversed. The scores obtained on each statement were cumulated to obtain the total score of a respondent on this dimension so that the maximum potential score for any individual will be 24 and the minimum zero.

e) Economic motivation

Economic motivation is an indication of the degree of willingness of an individual to invest the available potential resources in adoption of improved scientific practices related to the enterprise. An entrepreneur who views herself to be economically motivated may seek more monetary gains than the others may with values such as freedom from debt and self-sufficiency.

The self-rating economic motivation scale developed by Moulik (1965) was employed to measure the economic motivation of the entrepreneur in the present study. The scale consisted of three sets of statements, each set having three short statements with weights 3, 2 and 1 indicating high, medium and low degree of economic motivation. The forced choice method was followed to overcome the familiar problems of personal bias and lack of objectivity in self-evaluation. This method forced the respondent to choose from a group of three short statements describing a particular personality characteristic, the one that most accurately described the respondent herself and also the one that least accurately portrayed herself.

After obtaining the respondents 'most-least' choices for each of three sets of statements the scoring was done by summing up the ratios of the weights of the 'most-like' statement to the weight of 'least-like' statements. The ratio ranged from 0.30 to 3.0

f) Entrepreneurial knowledge

Entrepreneurial knowledge refers to the degree of internalisation of the facts and concepts related to livestock enterprise by the respondent, which gets reflected in her cognitive behaviour.

It was measured using a knowledge test developed for the purpose. The procedure of developing the test is briefly discussed below:

The knowledge test consists of questions called items. A number of items on the aspects of behavioural competency, enterprise launching competency and enterprise management competency related to each enterprise were collected from the training experts of entrepreneurship development programmes, available literature, subject matter specialists and personal experience. Altogether 30 items were collected. The items were converted into objective type of questions viz. multiple choice, true or false and sentence completion tests (fill in the blanks) etc.

Item analysis

Item analysis was carried out to ascertain the indices of item difficulty and item discrimination. The collected items were administered to 30 livestock farmwomen in a non-sample area. The correct responses were assigned a score of one each and the wrong answers a score of zero each. The total score of each individual for the 30 items was summed up and the total score was arranged in an ascending order.

As suggested by Anastasi (1961) the 30 respondents were grouped into three as high, medium and low groups representing 33.33 per cent of highest, 33.33 per cent of medium and 33.33 per cent of lowest scores respectively. The data pertaining to correct responses for all the items in respect of these three groups were tabulated and the difficulty and discrimination indices were calculated.

(i) Index of item difficulty

The difficulty index of each item was calculated by averaging the percentage of correct answers in high, medium and low groups.

$$P_i = \frac{n_i}{N_i} \times 100$$

Where P_i = Difficulty index expressed in percentage of i^{th} item

n_i = Number of respondents giving correct answers to the i^{th} item by low, medium and high groups

N_i = Total number of respondents to whom the i^{th} item was administered

(ii) Index of item discrimination

The discrimination index of each item, i.e. its capacity to discriminate the well informed from the poorly informed was calculated by the formula:

$$E = \frac{S_1 - S_2}{N/3}$$

Where E = Discrimination index

S_1 and S_2 = Frequencies of correct answers in high and low group respectively

N = Total number of respondents in the item analysis sample

(iii) Final selection of items

Those items, which had a difficulty index between 20 and 80 per cent and discrimination index above 0.30, were selected for inclusion in the knowledge test. Accordingly, 10 items were included in the final knowledge test (Appendix II).

Reliability

The test retest method was used to test the reliability of the knowledge test. All the ten items of knowledge test were administered twice to 30 non-sample farmers in Namakkal district. The two sets of knowledge scores were correlated. The co-efficient of correlation between the two sets of scores was 0.80, which was significant at 0.01 level indicating the high reliability of the test.

Validity

Content validity is a kind of validity by assumption as described by Guilford (1954). Care was taken to include items covering the entire universe of relevant aspects of knowledge with regard to livestock enterprise. Items were collected from various sources such as the scientists of the Tamil Nadu Veterinary and Animal Sciences University and officials of the Animal Husbandry promotion agencies. Hence it was assumed that the test could by all means measure the knowledge of the respondents and so the test could be considered as valid.

Method of scoring

The respondents were asked to indicate their responses to the items in the knowledge test and the correct answers were assigned a score of one and incorrect answers a score of zero. There were three items, (1,2 and 10) which narrated two sets of responses from the respondents. For such items, for each correct response a score of one was assigned. Thus, the maximum score that could be obtained by a respondent was 13 and minimum zero

g) Management orientation

Management orientation was operationally defined as the degree to which the respondent is oriented towards scientific management of the enterprise comprising of planning, production and marketing functions.

The scale developed by Samantha (1977) was made use of in this study for measuring management orientation. It consisted of 18 statements. There were six statements each for planning, production and marketing orientation. In each group, positive and negative statements were kept mixed with a more or less psychological order of the statements. In the case of positive statement a score of one was given for agreement and zero for disagreement. For negative statement, the scoring pattern was

reversed. The sum of the scores obtained by a respondent was taken as her score for management orientation. The possible score ranged from zero to 18.

h) Level of aspiration

Level of aspiration was operationalised as the respondents overall assessment of her concern for wishes and hopes for the future or for the fears and worries about the future in her own real world.

Level of aspiration in the present study was measured using the scale developed by Muthayya (1971) and adopted by Porchezian (1991), Jayalekshmi (1996) and Senthilvinayagam (1999) with slight modifications. The scale consisted of six statements with many alternatives provided for each item. Scores were assigned to the responses in each statement as given in the interview schedule (Appendix III). The scores obtained for each statement were summed to get the score on level of aspiration.

i) Leadership ability

Leadership ability was operationalised as the degree to which the livestock farmwomen can initiate or motivate the actions of other individuals. In this study, this was measured using the three point rating scale developed by Nandapurkar (1982). Five items relating to leadership ability were used in the scale. Response categories for each item were 'always', 'sometimes' and 'never' for which scores given were 2,1 and 0 respectively. By summing up the scores, the leadership ability score for a respondent was obtained.

j) Initiabiveness

Initiabiveness was operationally defined as the capacity of a livestock farmwoman to come forward on her own to take up some activities or enterprise.

Initiativeness in this context was measured using an arbitrary scale developed for the purpose. The scale consists of six statements. The respondents were asked to state their agreement or disagreement to each of the statements and a score of one and zero were assigned respectively for agreement and disagreement. In the case of negative statements the scoring pattern was reversed. Scores for each respondent was obtained by summation of the score for all the six statements. The score ranges from zero to six.

3.2.1.3 Entrepreneurial Behaviour Index (EBI)

EBI was developed as a weighted index of all the 10 components, viz. innovativeness, decision making, achievement motivation, risk orientation, economic motivation, entrepreneurial knowledge, management orientation, level of aspiration, leadership ability and initiativeness.

This was measured by formulating a mathematical formula index, described as below

$$EBI = \frac{\sum_{i=1}^k W_i \left(\frac{X_i}{X_{max}} \right)}{\sum_{i=1}^k W_i}$$

Where

- EBI = Entrepreneurial behaviour index
- K = Number of components
- W_i = Relevancy rating score of the ith component
- X_i = Score of the ith component
- X_{max} = Maximum score of the ith component.

3.2.1.4 Procedure and criteria adopted for grouping the components of entrepreneurial behaviour by factor analysis

Factor analysis was done using the responses of 300 farmwomen obtained on the 10 components of entrepreneurial behaviour index. The inter correlations of the 10 components worked out were initially subjected to principal factor solution to arrive at the minimum number of factors. The Eigen values of the 10 factors obtained from factor analysis are presented in Table 2. In the present study the number of factors whose Eigen values were found exceeding one were considered sufficient in describing the dependence structure. It could be observed from Table 2 that out of 10 factors, only one had shown Eigen value exceeding one. This factor was then subjected to varimax rotation and this yielded the rotated factor loading of the 10 components.

TABLE 2
FACTOR ANALYSIS: EIGEN VALUES AND FACTOR LOADINGS OF
SELECTED COMPONENTS OF ENTREPRENEURIAL BEHAVIOUR

S.No.	Components	Eigen values	Factor loadings
1.	Innovativeness*	5.48712	0.98604
2.	Decision making	0.53817	0.97731
3.	Achievement motivation*	0.87655	0.99121
4.	Risk orientation*	0.82686	0.99314
5.	Economic motivation*	0.72115	0.99021
6.	Entrepreneurial knowledge	0.44664	0.97206
7.	Management orientation*	0.62209	0.98942
8.	Level of aspiration	0.44430	0.97423
9.	Leadership ability	0.36909	0.96911
10.	Initiativeness*	0.57762	0.98205

* Components selected for grouping

The next step was to identify the important components based on their factor loadings. Fruchter (1954) suggested 0.50, Anantharaman (1991) considered 0.45 and Senthilvinayagam (1999) suggested 0.75 and above as minimum limit of factor loading for identification of important components. In this study, the average factor loading of the component was 0.98. Therefore, the components with factor loading of 0.98 and above were considered as important components and these were grouped into a single component.

Senthilvinayagam (1999) stated that components were interpreted by using the factor loadings, which were the largest in absolute magnitude and interpretation was done by determining what the variables have in common. Following the suggestions of Senthilvinayagam (1999), labelling the component was done.

3.3 SELECTION, OPERATIONALISATION AND MEASUREMENT OF INDEPENDENT VARIABLES

Based on the objectives, review of literature, discussion with extension scientists and observations made by the researcher, a list of 24 characteristics that could possibly reveal the situational and behaviour characteristics of livestock farmwomen was prepared. These selected characteristics were subjected to relevancy rating by judges who are qualified and experienced faculty members in the discipline of Animal Husbandry and Agricultural Extension from almost all states of India.

The judges were requested to indicate the relevancy of these variables in influencing the entrepreneurial behaviour and to rate them on a five-point continuum as most relevant, more relevant, relevant, less relevant and least relevant. The responses were obtained from a total of 37 out of 65 judges selected for relevancy rating.

The frequency of each continuum related to the individual variable was worked out. Then the frequencies pertaining to most relevant and more relevant continuum were added and their percentage was worked out. Those variables rated by more than 70 per

cent of the judges as most relevant and /or more relevant was selected for inclusion in the study.

The variables with their corresponding percentages are given in Appendix IV. The variables thus selected were age, education, annual income, occupational status, economic status, scientific orientation, vocational diversification, self-confidence, closeness with livestock and industrial support system, competition orientation, credit orientation, rational orientation, training and mass media exposure.

Independent variables and their measurement

1. Age

In the present study, age is defined as the number of calendar years completed by the livestock farmwomen at the time of interview. This was measured by directly asking the respondent the number of years she has completed at the time of investigation. The categorisation is as follows:

Category	Age group (years)
Young	18-30
Middle	31-50
Old	Above 50

2. Education

Education refers to the extent of informal or formal learning possessed by the respondent. The different educational levels of the respondents were scored as per the procedure followed in the socio-economic status scale of Trivedi (1963) with slight modifications. The scoring procedure was as follows:

Level of education	Score
Illiterate	1
Can read only	2
Can read and write	3
Primary school	4
Middle school	5
High school	6
College and above	7

3. Occupational status

Occupational status was operationally defined as that position of livestock farmwomen, which provides her the main source of income and in which the respondent spends more time and attention. The occupational status of the respondents was measured using a scale developed for the purpose in which both the primary and subsidiary occupations were considered. The occupation of livestock enterprise was given the score of one (which all the respondents obtained) and the occupation of respondent as livestock enterprise along with any other subsidiary occupation was given an additional score of one thus, totally two.

4. Annual income

The income for one year obtained by the respondent was measured by computing the income obtained by her and her family members from main and subsidiary occupations and also from other sources. The response was obtained through a direct question posed to the respondent. The scoring procedure adopted was as follows:

Category (Rs.)	Score
Up to 20000	1
20000 - Below 40000	2
40000 - Below 60000	3
Above 60000	4

5. Economic status

Economic status of the respondent was measured in terms of

- a. house type
- b. material possession and
- c. fixed assets of the respondent

a) House type

For this study, the scoring procedure adopted by Surendran (1982) and Senthilvinayagam (1999) was followed with slight modification for measuring the type of house. It was as follows:

House type	Score
Thatched	1
Tiled	2
Terraced	3

b) Material possession

Bhaskaran (1976), Sivaramakrishnan (1981) and Senthilvinayagam (1999) used index to measure material possessed by them. The money value was assigned to each material based on the respondents' assessment and in the case of discrepancies, market value of the materials was taken. The same method was followed for the present study also with slight modification. The total money value was worked out and these values were categorised into 5 classes and scores assigned for each class as given below:

Money value (Rs)	Score
Up to 50,000	1
50,000 – Below 100000	2
100000 – Below 150000	3
150000- Below 200000	4
Above 200000	5

c) Fixed assets

It includes money value of respondent's house, farm buildings and total land in her possession. The total money value of all these items was worked out and categorised into five arbitrary classes. The scoring procedure followed is indicated below:

Money value (Rs)	Score
Up to 5 lakhs	1
5 lakhs – Below 10 lakhs	2
10 lakhs - Below 15 lakhs	3
15 lakhs - Below 20 lakhs	4
Above 20 lakhs	5

Eventually, the score of all the three categories i.e., house type, material possession and fixed assets were added and this represented the economic status.

6. Scientific orientation

Scientific orientation was operationalised as the degree to which a respondent was oriented to the use of scientific method in decision making in livestock activities. Scientific orientation scale developed by Supe (1969) was used in the study. The scale consists of six statements, of which the second one was negative, while the rest were positive. The scoring for the positive statements in the scale was

Response	Score
Strongly agree	5
Agree	4
Undecided	3
Disagree	2
Strongly disagree	1

The scoring pattern was reversed in the case of negative items. The score obtained for each statement was summed up to get the scientific orientation score for an individual respondent. The possible range of score in this scale was from 6 to 30.

7. Vocational diversification

Vocational diversification has been operationalised as taking up any complementary and / or supplementary occupation(s) by the respondent with a view to increase their income. This was measured following the procedure adopted by Somasundaram (1976), Sethy (1982) and Senthilvinayagam (1999) with necessary modifications as given below:

Occupation(s)	Score
Enterprise alone	1
Enterprise + caste occupation	2
Enterprise + caste occupation + Business	3
Enterprise + caste occupation +business + public service	4

8. Self-confidence

Self-confidence was operationalised as the feeling of an individual about her ability, initiativeness and zeal to achieve her goal or aim. This variable was measured by the scale developed by Basavanna (1971) and modified by Prasad (1983).

The scale consisted of ten statements. The statements 3,6 and 10 were positive while the remaining were negative. The response on these statements were obtained as either agree or disagree. For an 'agree' response on the positive statements and 'disagree' response on the negative statements a score of one was assigned. Similarly, for a 'disagree' response on the positive statements and an 'agree' response on the negative statements, zero score was assigned. The summation of the scores obtained by an individual indicates her level of self-confidence. The possible score varied from zero to ten.

This variable was operationalised as the extent to which the respondent made contact with the personnel of various agencies and organisations related to her enterprise(s). Bora (1986) measured closeness with agricultural support system of farmers by preparing the list of personnel and various organisations and asking the respondents to indicate their closeness in respect of each of the personnel. The list of personnel and organisations were modified in consultation with subject matter specialists and entrepreneurs for use in this study (Details are given in Appendix III, item No.9). The respondents, were asked to indicate their responses on a four-point continuum namely, most often, often, sometimes and never with weightages 3,2,1 and 0 respectively. By summing up the scores, closeness with livestock and industrial support system score of a respondent was obtained.

10. Competition orientation

Competition orientation was operationalised as the degree to which a respondent was oriented to place herself in a competitive situation in relation to others for projecting her excellence in livestock activity. This was measured using the scale developed by Singh (1981) and adopted by Anantharaman (1991) and Senthilvinayagam (1999). The scale consisted of six statements, of which the third and sixth statements indicate negative orientation. Each statement was provided with four point response categories namely strongly agree, agree, disagree and strongly disagree with weights of 4,3,2 and 1 respectively for positive statements and 1,2,3 and 4 respectively for negative statements.

The response to each statement by the respondent was noted and the summation of the weightages gave the score for orientation towards competition by the respondent. The range of the scores was from 6 to 24.

Credit orientation was operationalised as the respondent's orientation to avail and utilise the loan facilities of different organisations and agencies promoting the development of livestock enterprise. The borrowing behaviour of the respondents was measured in particular to know the extent to which they utilise these organisations or agencies. It was measured with the help of the scale developed by Mishra (1979) and scoring procedure adopted by Sethy (1982) (Appendix V).

12. Rational orientation

Rational orientation was operationalised as the extent to which the respondents exhibited rationality and scientific mind in relation to various scientific recommendations. The procedure developed by Jetley (1977) and adopted by Manju (1996) was used to measure the rational orientation of the respondents.

The rational orientation scale consisted of three statements viz. belief in stars not in scientific recommendations, belief in stars and scientific recommendations and belief only in scientific recommendations with scores of 1,2 and 3 respectively. The range of the total score for the rational orientation was from 1 to 3.

13. Training

Training was operationalised as the extent to which the respondents got to improve their knowledge and skills related to livestock enterprise. Training of the respondent was measured, if the respondent had received training related to her enterprise, a score of two was given and the respondent who had not received training related to her enterprise, a score of one was given.

Mass media exposure is defined as the extent to which a livestock farmwoman is exposed to different mass media such as radio, television, newspaper, magazine and videocassettes. In the present study, mass media exposure was measured using a Likert scale developed for the study. The respondents were asked whether they have been exposed to the various mass media and the following scoring procedure was adopted:

Yes - 1

No - 0

If yes, to indicate the frequency, the following scoring procedure was adopted:

Always - 2

Sometimes - 1

The score obtained for each item was summed up to arrive at the individual's total score for mass media exposure.

3.4 CONSTRAINTS PERCEIVED BY LIVESTOCK FARMWOMEN

Based on the experience, observations of the researcher, review of literature and discussion with experts of livestock promotion agencies, five important constraints along with its nature of difficulties / problems each affecting the rural women in starting a livestock enterprise were listed.

The response to each constraint along with its nature of difficulties / problems was obtained on a five point continuum viz. most serious, more serious, serious, less serious and least serious with weights of 5, 4, 3, 2, and 1 respectively. For each constraint, the frequency of the response under each category was multiplied with its

respective weightage and added up to get the total score for that particular constraint. The mean score for each constraint was obtained by using the following formula:

$$\text{Mean score} = \frac{\text{Total score}}{\text{No. of respondents} \times \text{No. of items in each constraint}}$$

3.5 PROCEDURE EMPLOYED IN DATA COLLECTION

A pilot study was conducted in a non-sample area by applying the structured schedule to 30 respondents. According to the responses, the schedule was restructured with appropriate correction and modification. The final interview schedule used for data collection is given in Appendix III.

The data collection was carried out during January to May 2000. The data were collected through personal interview taking into consideration of the guidelines and recommendations suggested by Campbell *et al.* (1979) to ensure maximum accuracy.

3.6 STATISTICAL TOOLS USED IN THE STUDY

The data collected from the livestock farmwomen were coded, compiled and analysed using the following statistical techniques. Assuming that the data were at least in the ordinal level of measurement and distributed with considerable degree of homogeneity of variance, more of parametric tests were used.

3.6.1 Delinious-Hodges cumulative method of classification

Delinious-Hodges cumulative method as explained by Delinious and Gurney (1951) was used to classify the respondents. Having arranged data into ascending or descending order, several arbitrary classes were formed depending on the number of classes to be finally obtained. The upper limit of each class was obtained using the formula

$$U = l + \frac{Nk - m}{f} \times c$$

Where U = Upper limit of the new class

k = quartile number

$$N = \sum \sqrt{f}$$

l = lower limit of the quartile class

m = cum \sqrt{f} below the quartile class

f = frequency of the quartile class

C = class interval of the arbitrary classes

3.6.2 Pearson's product moment correlation

This measure was used to assess the nature and degree of association between the independent variables and the dependent variable.

$$r = \frac{\sum xy - \frac{\sum x \sum y}{n}}{\sqrt{[\sum x^2 - (\sum x)^2 / n][\sum y^2 - (\sum y)^2 / n]}}$$

3.6.3 Multiple linear regression analysis

Multiple linear regression analysis was done to determine the net contribution of selected independent variables on the dependent variable. This gives the percentage of variation that a set of independent variables jointly explains on the dependent variable.

The regression equation employed in the study was

$$Y = a + b_1 x_1 + b_2 x_2 + \dots + b_n x_n$$

Where

- Y = dependent variable
- a = intercept
- x_1, x_2, \dots, x_n = independent variables
- b_1, b_2, \dots, b_n = regression co-efficient

The high R^2 values and significant R-value suggest the desirability of regression analysis in predicting the dependent variable. The test of significance of regression co-efficient (b's) was carried out with the help of 't' value computed.

3.6.4 Step down regression analysis

This was done to identify those variables with the maximum contribution towards predicting the dependent variable by eliminating the variables of less importance. The step-wise regression analysis selects the best sub-set of variables that contribute maximum variability on dependent variable as suggested by Draper and Smith (1966).

3.6.5 Factor analysis

Factor analysis, according to Kerlinger (1964) is a method for determining the number and nature of the underlying variables among larger numbers of measures. More succinctly, it is a method for determining 'k' underlying variables (factors) from 'n' sets of measures, 'k' being less than 'n'. It may also be called a method for extracting common factor variances from sets of measures. Factor analysis reduces the multiplicity of tests and measures to greater simplicity. It tells us, in effect, what test measures belong together, or in other words which ones virtually measure the same thing and how much they do so. It helps to locate and identify unities or fundamental properties underlying tests and measures. In the present study, factor analysis was employed to identify the important factors among the dimensions of entrepreneurial behaviour.

The path coefficients are nothing but standard regression co-efficients. Path coefficients are directional and may be positive or negative and may be greater than or less than unity. The technique of path analysis deals with the complete determination of one variable from the knowledge of a set of variables (Dipak and Rao, 2001).

3.6.8 Spearman's rank correlation test

This test was done to investigate the significance of the correlation between two series of observations, based on ranks obtained in pairs. The r_i observation were assigned the rank numbers 1,2,.....n in the order of increasing magnitude. A similar procedure is carried out for all the y_i observations. For each pair of observations, the difference in the ranks (d_i) was calculated. Then the Spearman's rank correlation was obtained by using the following test statistic

$$R = 1 - \frac{6 \sum d_i^2}{n(n^2-1)}$$

Calculated value was compared with critical value obtained from table.

3.7 HYPOTHESES OF THE STUDY

Keeping in view the objectives, review of literature and conceptual orientation of the study, the following null hypotheses were framed for the present investigation.

1. There will be no significant difference between farmwomen in livestock enterprise with respect to entrepreneurial behaviour.
2. There will be no significant relationship between the entrepreneurial behaviour and personal, social and economic characteristics of farmwomen in livestock enterprise.

Results and Discussion

RESULTS AND DISCUSSION

The findings of the present study and the discussion there on are presented in this chapter under the following sub-heads :

- 4.1. Entrepreneurial behaviour of farmwomen in livestock enterprise
- 4.2. Relative importance of different components of the entrepreneurial behaviour
- 4.3. Personal and socio-economic profile of the livestock farmwomen
- 4.4. Relationship between entrepreneurial behaviour and personal, social and economic characteristics of farmwomen in livestock enterprise
- 4.5. Constraints perceived by the farm women entrepreneurs
- 4.6. Strategies for entrepreneurship development of farmwomen in the livestock enterprise

4.1 ENTREPRENEURIAL BEHAVIOUR OF FARM WOMEN IN LIVESTOCK ENTERPRISE

4.1.1 Entrepreneurial behaviour of livestock farmwomen

The distribution of livestock farmwomen with respect to their entrepreneurial behaviour indices was obtained using Delinious-Hodges stratification procedure and the results are presented in Table 3.

TABLE 3
ENTREPRENEURIAL BEHAVIOUR OF LIVESTOCK FARMWOMEN

(n = 300)

S.No.	Category	Class interval	Frequency	Percentage
1.	Very low	Upto 50	31	10.33
2.	Low	51-60	56	18.67
3.	Moderate	61-70	53	17.67
4.	High	71-80	65	22.00
5.	Very high	Above 80	94	31.33

The Table highlights that more than 53 per cent of the livestock farmwomen had high entrepreneurial behaviour. This finding of the study is in accordance with the findings of Venkataramaiah (1993), Porchezian *et al.* (1998) and Senthilvinayagam (1999). They also reported that most of the entrepreneurs had high entrepreneurial behaviour.

Even though most of the livestock farmwomen had not attended any training, their entrepreneurial behaviour was high. Since most of the farmwomen were literate and had medium to high level of mass media exposure, they might have comprehended the abstract meaning provided by the mass media with regard to entrepreneurial development. The literacy coupled with average income level and high self-confidence might made the entrepreneur to take initiativeness and risk. Majority of the livestock farmwomen possessed high to medium level of competition orientation and closeness with livestock and industrial support system which might be the reasons for the entrepreneur to achieve more from her enterprise.

4.1.2 Components of entrepreneurial behaviour

The components of entrepreneurial behaviour of livestock farmwomen were obtained using Delinious-Hodges stratification procedure and the results are presented in the Fig. 2 to 11.

4.1.2.1 Innovativeness

More than half of the total respondents had high level of innovativeness followed by medium (27 per cent) and low (18 per cent) levels of innovativeness (Fig.2).

The reason for majority of the respondents having high level of innovativeness might be due to the fact that majority of the livestock farmwomen were in the middle and young

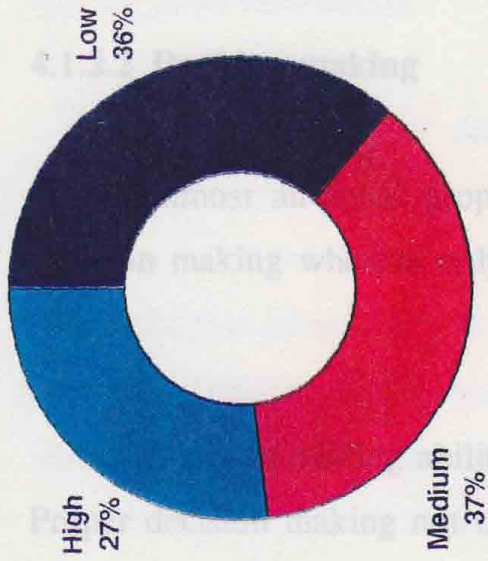


Fig. 3 Decision making

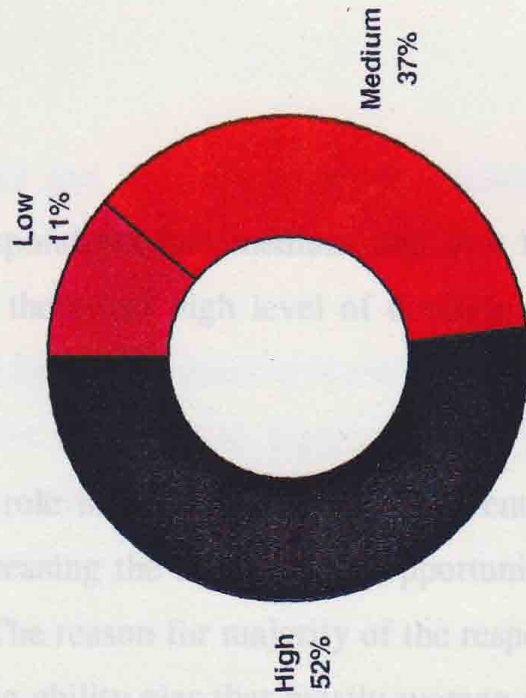


Fig. 5 Risk orientation

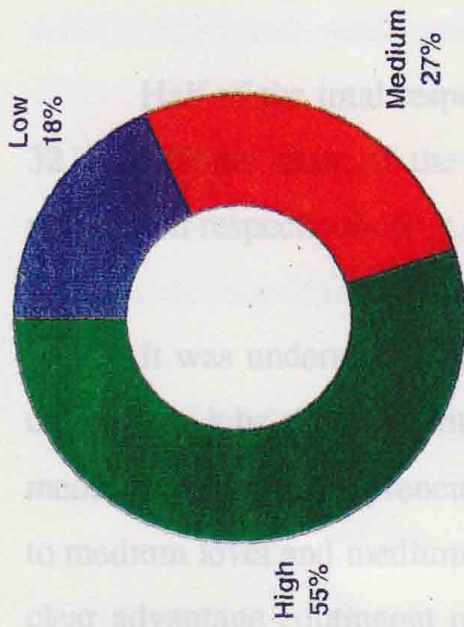


Fig. 2 Innovativeness

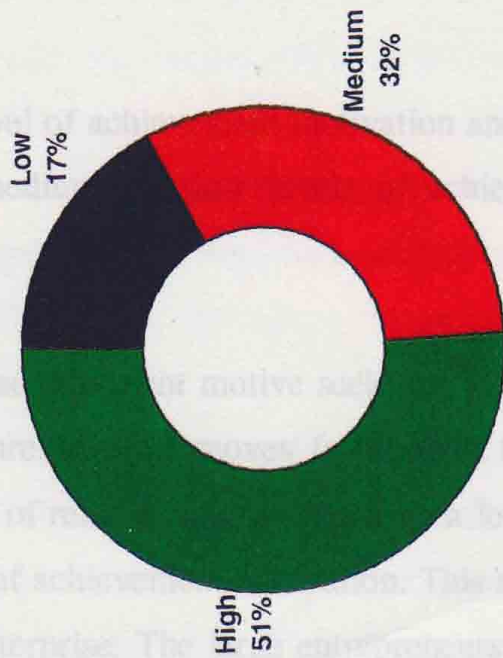


Fig. 4 Achievement motivation

4.1.2.3 Achievement motivation

The respondents had high level of achievement and also innovativeness had more than 50% of the respondents. It was understood that people with high achievement motivation and innovativeness are more likely to be successful in nature. In nature, the achievement of respondents is more towards high level. The respondents had high level of achievement motivation. This shows clear advantage of respondents on the size of the enterprise. The respondents have a natural and obvious advantage, as achievement motivation behaviour is consequential in

age group and also literate. This made them to adopt innovative ideas much earlier than the old and illiterate women. This finding is in accordance with the findings of Swamy (1988) and Singh and Krishna (1994).

4.1.2.2 Decision making

Almost an equal proportion of the respondents had medium and low level of decision making whereas only 27 per cent of them had high level of decision making (Fig.3).

Decision making ability plays a major role in the management of an enterprise. Proper decision making not only result in increasing the employment opportunities but also increasing the produce and income level. The reason for majority of the respondents having medium to low level of decision making ability was that mostly women actively involve in the day-to-day activities of the enterprise, by toiling and moiling from morning till night and they were well versed with the various activities of the enterprise. These findings are in line with the findings of Daniel (1986) and Singh and Krishna (1994).

4.1.2.3 Achievement motivation

Half of the total respondents had high level of achievement motivation and about 32 and 17 per cent of the respondents had medium and low levels of achievement motivation respectively (Fig.4).

It was understood that people with high achievement motive seek out, enjoy and do well at jobs that are entrepreneurial in nature. As one moves from small through medium to large entrepreneur, the concentration of relative shares shift from a low level to medium level and medium level to high level of achievement motivation. This shows a clear advantage contingent on the size of the enterprise. The large entrepreneurs have a natural and obvious advantage, as achievement motivation behaviour is consequential to

the perceived scope for growth. These findings are agreeable with the findings⁵⁹ of Banerjee and Talukdar (1997).

4.1.2.4 Risk orientation

More than half of the total respondents had high-risk orientation followed by medium (37 per cent) and low (11 per cent) levels of risk orientation (Fig.5).

Risk is an unavoidable factor right from the very beginning of establishment of an enterprise, which poses great difficulties. This becomes the biggest challenge of an entrepreneur in taking up any business activity. However, risk orientation in the case of an entrepreneur indicates her readiness to face challenges whenever they occur aiming at probably for a better chance of success. Success depends not only on chance but on one's own efforts. An individual involved in any livestock enterprise will no doubt have mental toughness to take risks such as uncertainty in disease outbreaks, natural calamities and market fluctuations. The livestock farmers have pledged their hard earnings to chance not once but for life. Hence farmwomen are well acclimated with the risk taking ability. This finding is supported by the earlier findings of Banerjee and Talukdar (1997).

4.1.2.5 Economic motivation

Nearly 50 per cent of the respondents had high level of economic motivation. Among the rest of the respondents, 31 and 21 per cents of them had medium and low levels of economic motivation respectively (Fig.6).

Economic motivation directs an entrepreneur towards profit augmentation and helps her to make more money out of her enterprises by utilising the resources. Economic motivation is one of the important motives, which moulds the entrepreneurial behaviour of individuals. Moreover, economic gain might be the foremost goal in starting an enterprise. Viewed in this angle, the result is quite logical. This result is in conformity with the findings of Wharton (1996).

4.1.2.6 Entrepreneurial knowledge

About 42 per cent of the respondents had medium level of entrepreneurial knowledge followed by low (33 per cent) and high (25 per cent) levels of knowledge respectively (Fig.7).

The medium and low level of knowledge of the farmwomen might be due to lack of training. Training means educating a person so as to be fitted, qualified and proficient in doing some job. Training helps in importing knowledge and in developing skills. The findings of this study is in line with the results of Manjula and Siddaramaiah (1994) and Ramamurthi *et al.*(1997).

4.1.2.7 Management orientation

About 54 percent of the respondents were observed to have high level of management orientation and 28 per cent and 18 per cent of the respondents were found to have medium and low levels of management orientation respectively (Fig.8).

Progress, prosperity and success of any system mainly depend on the managerial role played by its operators. An individual with high managerial efficiency can naturally utilise the available resources effectively towards the set goal. Management orientation shapes the entrepreneurs into better managers, which in turn may help them in proper planning, maximising the production and efficient marketing which are crucial process of their enterprises. The present findings gain support from the findings of Akhoury (1996).

4.1.2.8 Level of aspiration

About 45 per cent of the respondents had high level of aspiration towards entrepreneurship followed by 36 per cent and 19 per cent of them had medium and low levels of aspiration respectively (Fig.9).

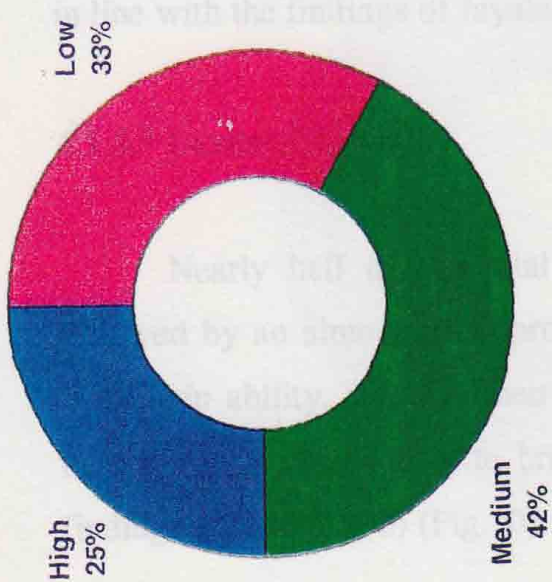


Fig. 7 Entrepreneurial knowledge

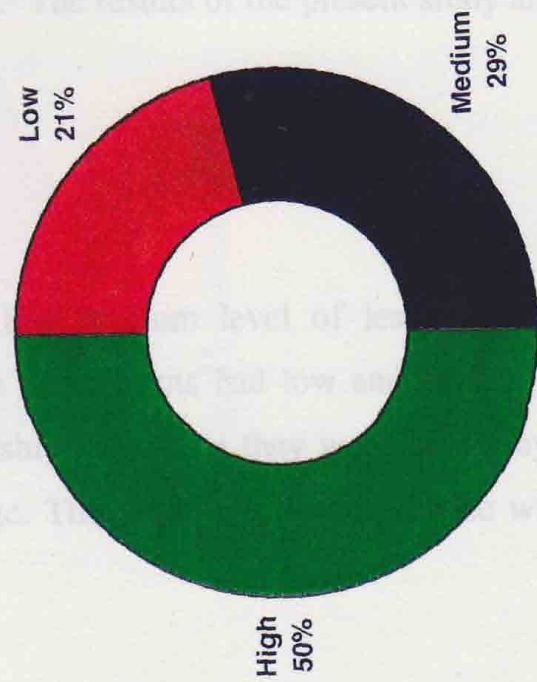


Fig. 9 Level of aspiration

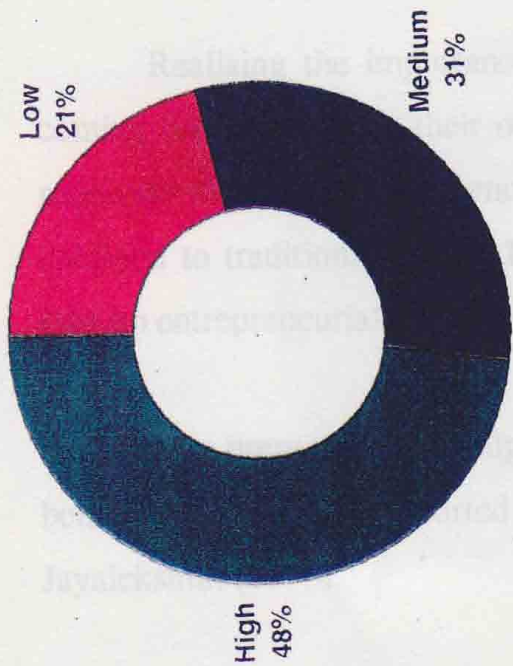


Fig. 6 Economic motivation

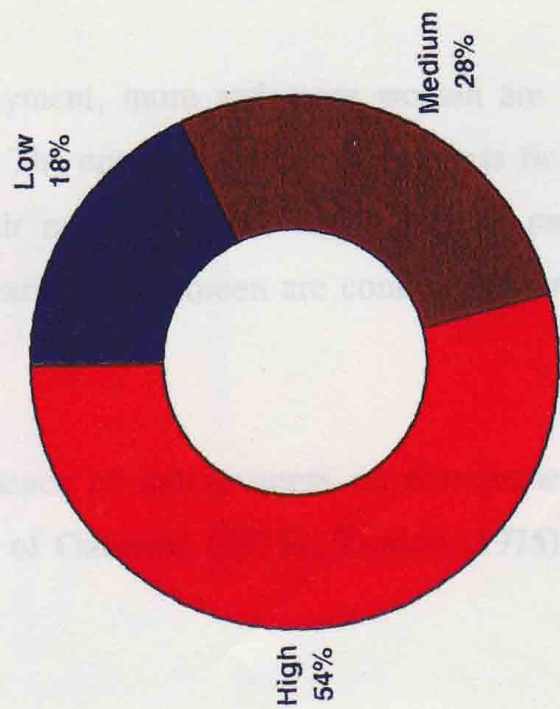


Fig. 8 Management orientation

4.1.2.10 Initiattiveness

An equal proportion of the respondents was found to have high and medium levels of initiattiveness followed by 16 per cent of respondents had low level of initiattiveness (Fig. 11).

The farmwomen more conceived for wishes and hopes for the future or for the fears and worries about the future in her own reality world. This might be the reason for the farmwomen to have high level of aspiration. The results of the present study are also in line with the findings of Jayalekshmi (1996).

4.1.2.9 Leadership ability

Nearly half of the total respondents had medium level of leadership ability followed by an almost equal proportion of the respondents had low and high levels of leadership ability. Farmwomen played leadership role when they were driven by their own vision to innovate or to bring in a change. This finding is in accordance with the findings of Paul (1998) (Fig.10).

4.1.2.10 Initiabiveness

An equal proportion of the respondents was found to have high and medium levels of initiabiveness followed by 16 per cent of respondents had low level of initiabiveness (Fig.11).

Realising the importance of self-employment, more and more women are now coming forward to start their own enterprise. The entry of women in business field is relatively common phenomenon. Initially their entrepreneurial ventures were mostly confined to traditional areas. But in recent years many women are coming forward to take up entrepreneurial role in high-tech areas.

The present finding highlights the salience of initiabiveness on entrepreneurial behaviour, which is supported by the studies of Gaikwad (1975), Tandon (1975) and Jayalekshmi (1996).

4.1.3 Important components of entrepreneurial behaviour

The data on the components of entrepreneurial behaviour were subjected to factor analysis. Six important components were identified through varimax rotation of factor analysis and they were named as Entrepreneurial Behaviour Efficiency (Table 4.1).

COMPOSITION OF ENTREPRENEURIAL BEHAVIOUR EFFICIENCY (Factor -1)

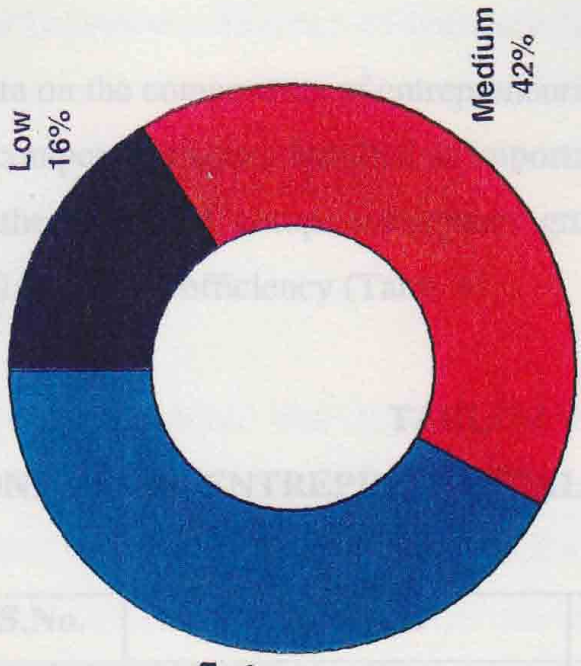


Fig. 11 Initiatiiveness

S.No.	Component	Factor loading
1.	Risk orientation	0.993
2.	Achievement motivation	0.991
3.	Economic motivation	0.990
4.	Management orientation	0.989
5.	Innovativeness	0.985
6.	Proactiveness	0.982

The six important components of entrepreneurial behaviour identified are risk orientation, achievement motivation, economic motivation, management orientation, innovativeness and proactiveness. The factor loadings of these components are 0.993, 0.991, 0.990, 0.989, 0.985 and 0.982 respectively.

The results are presented in Table 4.1. The results of the study of livestock farmwomen risk orientation is high (42%), medium (47%) and low (26%). The highest factor loading of 0.993, which explains 98.6% of the variance. Rural women must have the ability to take various risks in order to achieve their objective. The present finding, highlighting salience of risk bearing components on entrepreneurial behaviour, supported by the studies of Nadkarni (1988), Ponniah et al. (1990) and Kokate and Nair (1991).

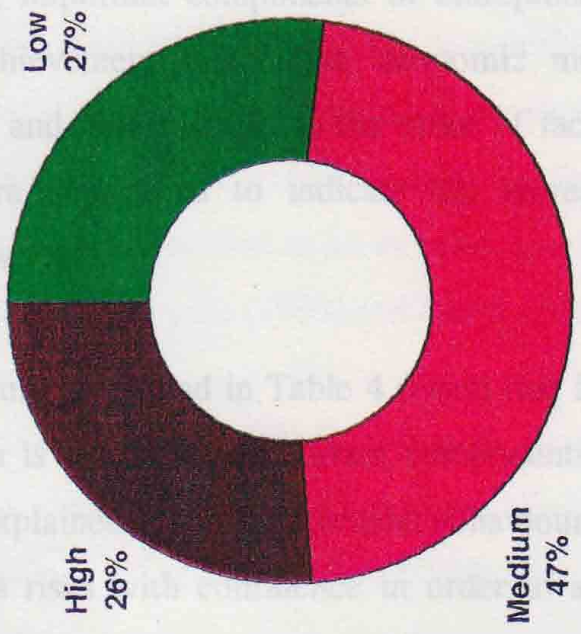


Fig. 10 Leadership Ability

The data on the components of entrepreneurial behaviour were subjected to factor analysis. Six components were identified as important through varimax rotation of factor analysis and the identified components were grouped into a single factor, termed, entrepreneurial behaviour efficiency (Table 4).

TABLE 4
COMPONENTS OF ENTREPRENEURIAL BEHAVIOUR EFFICIENCY
(Factor -1)

S.No.	Components	Factor loading
1.	Risk orientation	0.993
2.	Achievement motivation	0.991
3.	Economic motivation	0.990
4.	Management orientation	0.989
5.	Innovativeness	0.986
6.	Initiativeness	0.982

The six important components of entrepreneurial behaviour identified are risk orientation, achievement motivation, economic motivation, management orientation, innovativeness and initiativeness in the order of factor loading. The totalities of these components are considered to indicate the entrepreneurial behaviour efficiency of livestock farmwomen.

The results presented in Table 4 reveal that in the case of livestock farmwomen, risk orientation is one of the important components with the highest factor loading of 0.993, which explained the entrepreneurial behaviour. Rural women must have the ability to take various risks with confidence in order to achieve their objective. The present finding, highlighting salience of risk bearing components on entrepreneurial behaviour is supported by the studies of Nadkarni (1988), Perumal *et al.* (1990) and Kokate and Nand (1991).

Achievement motivation was another major factor (0.991), which explained the entrepreneurial behaviour efficiency of livestock farmwomen. Those farmwomen who had an urge to excel in their enterprise acquire knowledge regarding the enterprise and have more contact with the livestock industrial support system to satisfy their urge. This study is in concurrence with the results of Nandapurkar (1982), Sethy (1982), Singh *et al.* (1986) and Jayalekshmi (1996).

Economic motivation was found important in the case of entrepreneurial behaviour with a factor loading of 0.990. The main aim of an entrepreneur is to effectively utilize her physical and financial resources for making more wealth, income and employment. This finding is in line with the observations of Sarmah and Singh (1994) and Jayalekshmi (1996).

Management orientation yielded a factor loading of 0.989. Management means getting things done and it is considered as one of the most important factors in making an enterprise profitable. Farmwomen entrepreneur with high management orientation can increase the productivity of their enterprise. The findings of the study though not similar is in confirmity with the studies conducted by Anantharaman (1991).

The importance of innovativeness in entrepreneurial behaviour is reflected in its factor loading of 0.986. The farmwomen in livestock enterprise had eagerness to create something new or different, which might be the reason for high factor loading. Initiativeness was also identified as an important component of entrepreneurial behaviour of farmers by Ragavacharyulu (1983) and Porchezian (1991).

The farmwomen in livestock enterprise have capacity to come forward on her own to take up some activities or enterprises might be the reason for the component initiativeness yielded a factor loading of 0.982. This finding is in line with the finding of Jayalekshmi (1996).

It is evident that the insight obtained through the analysis of these components would help one to study and to modify the entrepreneurial behaviour of livestock farmwomen. High entrepreneurial behaviour efficiency will help the entrepreneur to take economic decisions as what to produce, how much to produce, when to produce and what method of production to adopt. It will also help the entrepreneur to anticipate and face fluctuations both in the exogenous and endogenous environment of the enterprise.

4.2 RELATIVE IMPORTANCE OF DIFFERENT COMPONENTS OF THE ENTREPRENEURIAL BEHAVIOUR

A stepwise regression analysis was conducted to know the relative importance of different components of the entrepreneurial behaviour by treating the entrepreneurial behaviour (EB) as the dependent variable. The results of the stepwise regression analysis are given in Table 5.

TABLE 5
STEPWISE REGRESSION ANALYSIS OF THE DIFFERENT COMPONENTS OF THE ENTREPRENEURIAL BEHAVIOUR INDEX

S.No	Components of entrepreneurial behaviour	Sum of square reduced	F Values	R
1.	Innovativeness	32330.57	22.008**	0.347
2.	Achievement motivation	12709.05	16.105**	0.403
3.	Risk orientation	14118.52	15.007**	0.435
4.	Economic motivation	11467.47	14.974**	0.469
5.	Management orientation	4467.60	12.442**	0.493
6.	Initiativeness	2905.11	10.174**	0.501
7.	Decision making	2111.09	8.084**	0.519
8.	Level of aspiration	1905.11	7.249**	0.527
9.	Entrepreneurial knowledge	1171.49	6.522**	0.531
10.	Leadership ability	9.29	5.849**	0.532

** Significant at 1 per cent level

All the components of entrepreneurial behaviour scale were highly significant. This empirical evidence points out that all components entered in stepwise regression analysis were important since none of them were eliminated in this analysis. The most important three components in the order of importance were (I) Innovativeness (II) Achievement motivation and (III) Risk orientation, while the three least important components were (i) level of aspiration (ii) entrepreneurial knowledge and (iii) leadership ability.

It is thus observed that the order of importance given to the different components while developing the index based on judges opinion has not remained the same in this stepwise regression analysis.

Path analysis

The multiple regression co-efficient and multiple correlation indicate that all the components of entrepreneurial behaviour were highly significant. Thus, the empirical evidence clearly indicates that all the components considered in the study were important as far as entrepreneurial behaviour is concerned.

It is, of interest to study the influence of the independent variable influencing on the dependent variable both directly as well as indirectly. The data, therefore, reset and computed for path analysis. The path co-efficient has been presented in Table 6.

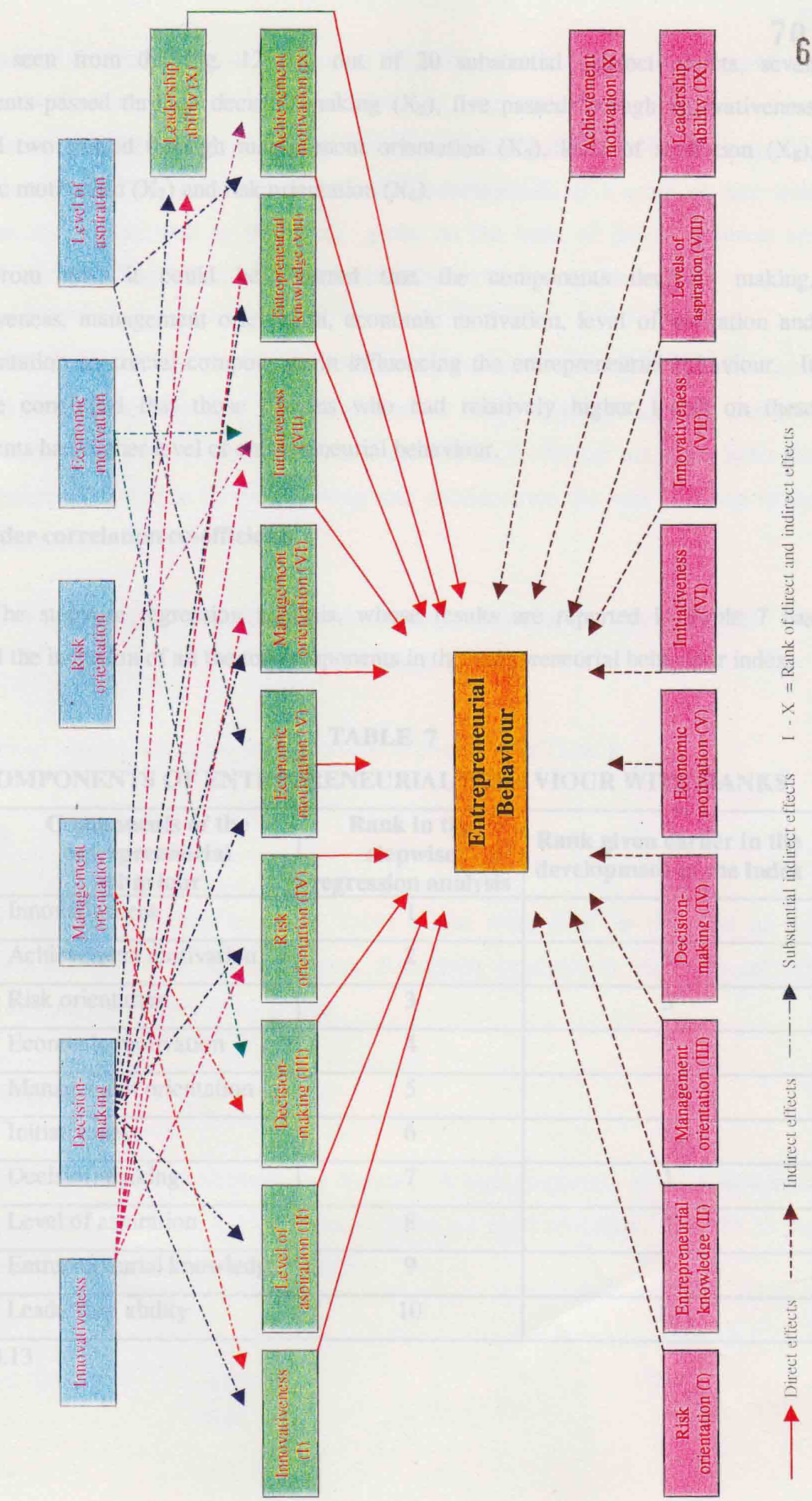
Path analysis was employed to find out a quantitative interpretation of direct, indirect and substantial indirect effects on the entrepreneurial behaviour. The results are furnished in Table 6 and from this it is evident that all the 10 independent variables were found to have direct effect on the entrepreneurial behaviour. Among them, based on the order of the variables, innovativeness (X_1), level of aspiration (X_8), decision making (X_2), risk orientation (X_6), economic motivation (X_7), management orientation (X_5), initiativeness (X_{10}), entrepreneurial knowledge (X_4), achievement motivation (X_3) and

leadership ability (X_9) had positive direct effect on entrepreneurial behaviour. But all the variables contributed positive indirect effects except achievement motivation (X_3).

TABLE 6
PATH COEFFICIENT SHOWING THE DIRECT, INDIRECT AND
SUBSTANTIAL INDIRECT EFFECTS OF INDEPENDENT COMPONENTS ON
ENTREPRENEURIAL BEHAVIOUR

S.No.	Independent components	Direct effect	Rank	Total indirect effect	Rank	Substantial indirect effect	
						1 st	2 nd
1	Innovativeness	0.2843	I	0.1373	VII	0.0525	0.0302
2.	Decision making	0.1435	III	0.2029	IV	0.0537	0.03334
3.	Achievement motivation	0.0729	IX	-0.0490	X	0.0432	0.0384
4.	Entrepreneurial knowledge	0.0851	VIII	0.2202	II	0.0850	0.0637
5.	Management orientation	0.0932	VI	0.2114	III	0.0931	0.0827
6.	Risk orientation	0.1358	IV	0.6424	I	0.0935	0.0477
7.	Economic motivation	0.1164	V	0.1432	V	0.0507	0.0416
8.	Level of aspiration	0.1663	II	0.0921	VIII	0.0555	0.0227
9.	Leadership ability	0.0152	X	0.0911	IX	0.1001	0.0642
10.	Initiativeness	0.0902	VII	0.1391	VI	0.0623	0.0731

Figure 12 Path coefficient showing the direct, indirect and substantial indirect effects of independent variables on entrepreneurial behaviour



→ Direct effects
 Indirect effects
 Substantial indirect effects
 I - X = Rank of direct and indirect effects

As seen from the Fig. 12 that out of 20 substantial indirect effects, seven components passed through decision making (X_2), five passed through innovativeness (X_1) and two passed through management orientation (X_5), level of aspiration (X_8), economic motivation (X_7) and risk orientation (X_6).

From this, it could be inferred that the components decision making, innovativeness, management orientation, economic motivation, level of aspiration and risk orientation as crucial components in influencing the entrepreneurial behaviour. It could be concluded that those persons who had relatively higher levels on these components had higher level of entrepreneurial behaviour.

Rank order correlation co-efficient

The stepwise regression analysis, whose results are reported in Table 7 has validated the inclusion of all the ten components in the entrepreneurial behaviour index.

TABLE 7
COMPONENTS OF ENTREPRENEURIAL BEHAVIOUR WITH RANKS

S.No.	Components of the entrepreneurial behaviour	Rank in the stepwise regression analysis	Rank given earlier in the development of the index
1.	Innovativeness	1	2
2.	Achievement motivation	2	5
3.	Risk orientation	3	3
4.	Economic motivation	4	7
5.	Management orientation	5	9
6.	Initiativeness	6	8
7.	Decision-making	7	1
8.	Level of aspiration	8	4
9.	Entrepreneurial knowledge	9	6
10.	Leadership ability	10	10

$$\rho = 0.13$$

This empirical evidence has fully supported the judges opinion obtained in developing the scale with these ten components. However, the weightages given for these components based on the judges opinion have not remained the same in this step wise regression analysis. The ranks obtained for these components as a result of step wise regression analysis as well as the ranks given on the basis of judges' opinion are presented in Table 7 to indicate the difference between the two methods.

Rank difference correlation coefficient analysis reveals that right tail ρ -value was $\rho > 0.20$ which concludes that the ranks obtained based on judges opinion, and as a result of step wise regression analysis are independent. So, for further use of the index the revised weightages have to be given, taking into consideration the rank obtained in the step wise regression analysis.

4.3 PERSONAL AND SOCIO-ECONOMIC PROFILE OF LIVESTOCK FARMWOMEN

The close observation of the sample profile is presented in Table 8.

4.3.1 Age

It could be observed from the Table 8 that more than 50 per cent of the farmwomen belonged to middle age group. Remaining belonged to the young age (29 per cent) and old age (18 per cent) groups.

4.3.2 Education

Majority of the respondents were literates. A high proportion of the respondents had primary (32.67 per cent) and high school (30.66 per cent) education. Only 17.33 per cent of the respondents had college education.

TABLE 8
PERSONAL AND SOCIO – ECONOMIC PROFILE OF THE WOMEN
ENTREPRENEURS IN LIVESTOCK ENTERPRISE

S.No.	Variable	Category	Frequency	Percentage
1.	Age	Young (18-30 yrs)	87	29
		Middle (31-50 yrs)	159	53
		Old (above 50 yrs)	54	18
2.	Education	Illiterate	5	1.67
		Can read	16	5.33
		Can read & write	37	12.33
		Primary	98	32.67
		High School	92	30.66
		College	52	17.33
3.	Occupational status	AH	45	15.00
		AH+Allied Activities	255	85.00
4.	Annual income	Low	126	42.00
		Medium	131	43.60
		High	43	14.33
5.	Economic status	Low	125	41.66
		Medium	150	50.00
		High	25	8.34
6.	Scientific orientation	Low	49	16.33
		Medium	231	77.00
		High	20	6.66
7.	Vocational diversification	AH	45	15
		AH+Agriculture	180	60
		AH+Ag+Employment	72	24
		AH+Ag+Emp.+ Business	3	1
8.	Self-confidence	Low	71	23.67
		Medium	119	39.67
		High	110	36.67
9.	Closeness with livestock and industrial support system	Low	45	15.00
		Medium	69	23.00
		High	186	62.00
10.	Competition orientation	Low	29	9.67
		Medium	186	62.00
		High	85	28.33

11.	Credit orientation	Low	103	34.33
		Medium	94	31.34
		High	103	34.33
12.	Rational orientation	Low	27	9.00
		Medium	180	60.00
		High	93	31.00
13.	Training	Attended	50	16.67
		Not attended	250	83.33
14.	Mass media exposure	Low	92	30.66
		Medium	160	53.34
		High	48	15.99

AH - Animal Husbandry Ag – Agriculture

4.3.3 Occupational status

Nearly 85 per cent of the respondents had livestock rearing as subsidiary occupations and only 15 per cent of them had livestock enterprise as their primary occupation.

4.3.4 Annual income

More than three-fourths of the respondents (85.6 percent) had medium to low annual income while the rest of them belonged to high annual income group.

4.3.5 Economic status

Majority of the respondents (50 per cent) belonged to medium economic status while 41.66 per cent of the respondents fell in low economic category. Only 8.34 per cent of the respondents had high economic status.

4.3.6 Scientific orientation

More than three-fourths of the respondents (77 per cent) had medium scientific orientation and 16.33 per cent of them had low scientific orientation while the remaining 6.66 per cent had high scientific orientation.

4.3.7 Vocational diversification

The percentage of the respondents who possessed only animal husbandry enterprise was 15 and 60 per cent of the respondents had one additional occupation (animal husbandry and agriculture). The respondents who had animal husbandry, agriculture and employment was 24 per cent and only 1 per cent of the respondents had agriculture, employment, business along with animal husbandry.

4.3.8 Self-confidence

Almost equal proportion of the respondents had medium level (39.67 per cent) and high level (36.67 per cent) of self-confidence, while 23.67 per cent had low level of self-confidence.

4.3.9 Closeness with livestock and industrial support system

Majority of the respondents (62 per cent) had high level of closeness with support systems, while 23 per cent and 15 per cent had medium and low level of closeness respectively.

4.3.10 Competition orientation

A higher proportion of the respondents (62 per cent) had medium degree of competition orientation, whereas 28.33 and 9.67 per cents of them had high and low degrees of competition orientation respectively.

4.3.11 Credit orientation

An equal proportion of the respondents (34.33 percent) had high and low levels of credit orientation, while 31.34 per cent of them had medium level of credit orientation.

4.3.12 Rational orientation

More than half of the total respondents (60 per cent) had medium level rational orientation while 31 and 9 per cent of them had high and low levels of rational orientation respectively.

4.3.13 Training

Results show that majority of the respondents (83.33 per cent) had not undergone any training related to their enterprise, only 16.67 per cent of the respondents had undergone training.

4.3.14 Mass media exposure

While more than half of the total respondents, (53.34 per cent) had medium level of mass media exposure, 30.66 per cent of them had low level of media utilisation and only 15.99 per cent had high level of mass media exposure.

4.4 RELATIONSHIP BETWEEN ENTREPRENEURIAL BEHAVIOUR AND PERSONAL, SOCIAL AND ECONOMIC CHARACTERISTICS OF FARMWOMEN IN LIVESTOCK ENTERPRISE

The relationship between the entrepreneurial behaviour and personal, social and economic characteristics of farmwomen in livestock enterprise are presented under the following subheads:

4.4.1 Simple correlation analysis

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Table 9 (Fig.13) indicates that out of the 14 independent variables included in this study, 10 variables significantly and positively correlated with the entrepreneurial behaviour of livestock farmwomen. They were education, annual income, economic status, scientific orientation, self-confidence, closeness with livestock and industrial support system, competition orientation, credit orientation, rational orientation and mass media exposure.

TABLE 9
SIMPLE CORRELATION ANALYSIS OF ENTREPRENEURIAL BEHAVIOUR
WITH PERSONAL, SOCIAL AND ECONOMIC CHARACTERISTICS OF
FARMWOMEN IN LIVESTOCK ENTERPRISE

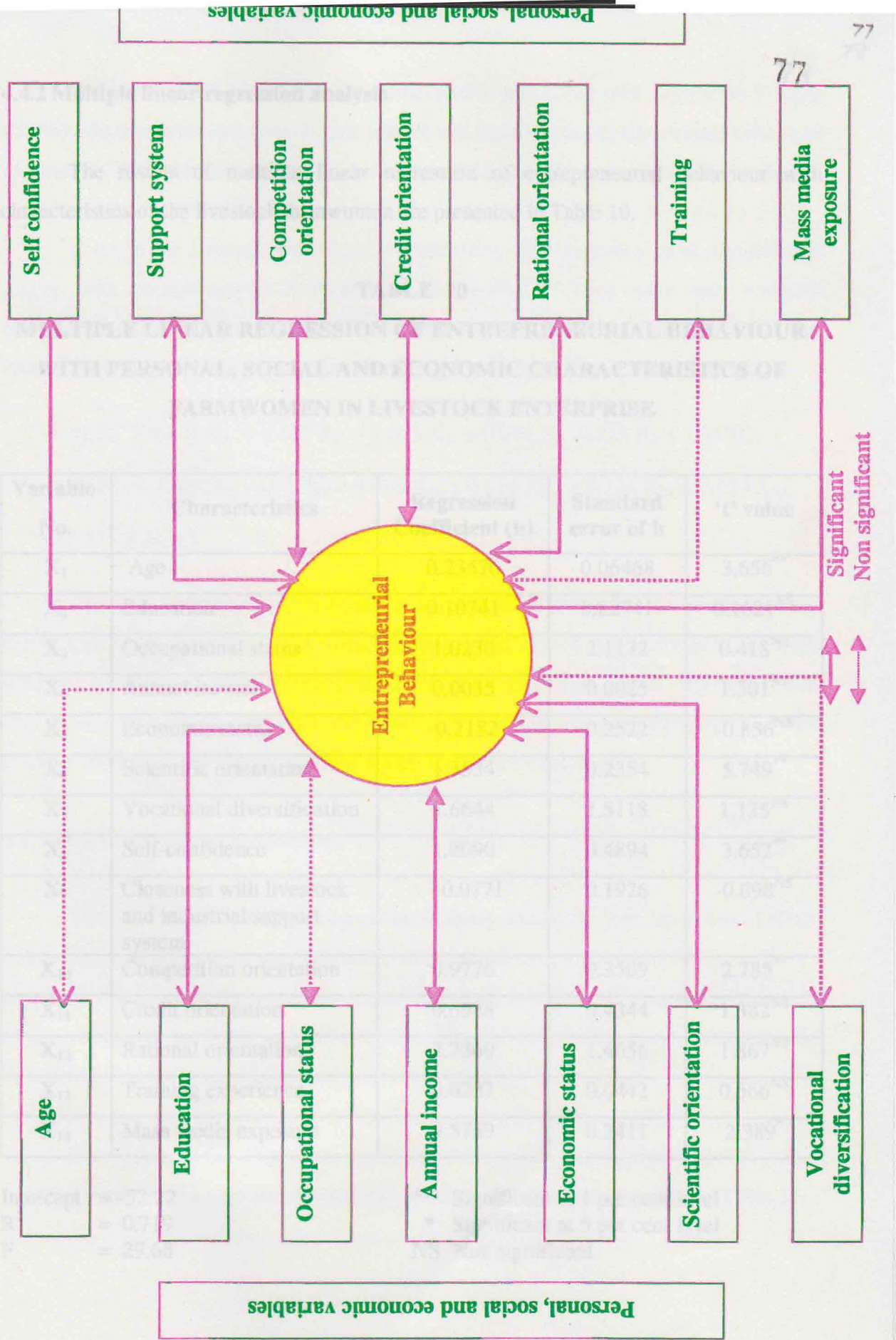
(n=300)

Variable No.	Characteristics	Correlation coefficient (r)
X ₁	Age	- 0.03090 ^{NS}
X ₂	Education	- 0.2554 ^{**}
X ₃	Occupational status	- 0.09521 ^{NS}
X ₄	Annual income	0.3357 ^{**}
X ₅	Economic status	0.3689 ^{**}
X ₆	Scientific orientation	0.8935 ^{**}
X ₇	Vocational diversification	0.0225 ^{NS}
X ₈	Self confidence	0.6938 ^{**}
X ₉	Closeness with livestock and industrial support system	0.6314 ^{**}
X ₁₀	Competition orientation	0.8512 ^{**}
X ₁₁	Credit orientation	0.3018 ^{**}
X ₁₂	Rational orientation	0.5361 ^{**}
X ₁₃	Training	0.0284 ^{NS}
X ₁₄	Mass media exposure	0.5253 ^{**}

** Significant at 1 per cent level

NS – Not significant

Fig. 13 Programmatic representation of the observed relationship between the entrepreneurial behaviour of livestock farmwomen and their personal, social and economic characteristics



4.4.2 Multiple linear regression analysis

The results of multiple linear regression of entrepreneurial behaviour with characteristics of the livestock farmwomen are presented in Table 10.

TABLE 10
MULTIPLE LINEAR REGRESSION OF ENTREPRENEURIAL BEHAVIOUR
WITH PERSONAL, SOCIAL AND ECONOMIC CHARACTERISTICS OF
FARMWOMEN IN LIVESTOCK ENTERPRISE

Variable No.	Characteristics	Regression Coefficient (b)	Standard error of b	't' value
X ₁	Age	0.23576	0.06468	3.656**
X ₂	Education	0.10741	0.82741	0.1621 ^{NS}
X ₃	Occupational status	1.0230	2.1172	0.418 ^{NS}
X ₄	Annual income	0.0035	0.0025	1.301 ^{NS}
X ₅	Economic status	-0.2182	0.2522	-0.856 ^{NS}
X ₆	Scientific orientation	1.3534	0.2354	5.749**
X ₇	Vocational diversification	1.6644	1.5118	1.125 ^{NS}
X ₈	Self-confidence	1.8090	0.4894	3.652**
X ₉	Closeness with livestock and industrial support system	-0.0771	0.1926	-0.098 ^{NS}
X ₁₀	Competition orientation	0.9776	0.3509	2.785**
X ₁₁	Credit orientation	0.6986	0.4344	1.382 ^{NS}
X ₁₂	Rational orientation	2.7360	1.4656	1.867 ^{NS}
X ₁₃	Training experience	0.0227	0.0442	0.566 ^{NS}
X ₁₄	Mass media exposure	0.5759	0.2411	2.389*

Intercept = -52.22
R² = 0.719
F = 29.68

** Significant at 1 per cent level
* Significant at 5 per cent level
NS Not significant.

The co-efficient of determination worked out was 0.719 with significant F value (29.68) which reveals that over 71 per cent of the variation in entrepreneurial behaviour of livestock farmwomen could be explained by the 14 variables selected for the study.

It could be noticed that out of 14 variables, five variables were significantly related with entrepreneurial behaviour of farmwomen. They were age, scientific orientation, self-confidence, competition orientation and mass media exposure. The multiple regression equation fitted for predicting the entrepreneurial behaviour was

$$Y = -52.22 + 0.236 X_1 + 0.107 X_2 + 1.023 X_3 + 0.004 X_4 - 0.218 X_5 + 1.353X_6 + 1.664X_7 + 1.809 X_8 - 0.077X_9 + 0.978 X_{10} + 0.699 X_{11} + 2.736 X_{12} + 0.023 X_{13} + 0.576 X_{14}$$

From the above prediction equation it could be inferred that an increase in age would lead to an increase in EBI by 0.236 units. Similarly, a unit increase in scientific orientation, self-confidence, competition orientation and mass media exposure would lead to an increase in the EBI by 1.353, 1.809, 0.978 and 0.576 units respectively. While positive changes in the above variables would lead to increase in EBI.

4.4.3 Step down regression analysis

Though the multiple linear regression analysis reveals the joint influence of all the independent variables on entrepreneurial behaviour, it was considered better to have a simple model in which there is lesser number of predictors in explaining the relationship. Hence to obtain the joint influence of the best set of predictors of entrepreneurial behaviour, step down regression analysis was done.

The results of the step down regression analysis on entrepreneurial behaviour of livestock farmwomen with the selected independent variables are presented in Table 11.

**STEP DOWN REGRESSION ANALYSIS OF ENTREPRENEURIAL
BEHAVIOUR WITH PERSONAL, SOCIAL AND ECONOMIC
CHARACTERISTICS OF FARMWOMEN IN LIVESTOCK ENTERPRISE**

(n=300)

Step No.	Variables for regression	Multiple correlation coefficient (R)	R ²	'F' Value
I	All the variables included	0.8482	0.7194	29.68**
II	Variables excluding X ₁₁	0.8481	0.7193	33.49**
III	Variables excluding X ₂	0.8480	0.7191	38.20**
IV	Variables excluding X ₉	0.8478	0.7188	41.07**
V	Variables excluding X ₁₃	0.8471	0.7176	44.18**
VI	Variables excluding X ₅	0.8464	0.7164	47.08**
VII	Variables excluding X ₃	0.8454	0.7147	52.00**
VIII	Variables excluding X ₄	0.8435	0.7115	56.06**

** Significant at 1 per cent level

(Remaining variables included X₁, X₆, X₇, X₈, X₁₀, X₁₂, X₁₄)

X ₁ -Age	X ₆ - Scientific orientation	X ₁₀ - Competition orientation
X ₂ - Education	X ₇ - Vocational diversification	X ₁₁ - Credit orientation
X ₃ -Occupational status.	X ₈ - Self confidence	X ₁₂ - Rational orientation
X ₄ -Annual income	X ₉ - Closeness with livestock and industrial support system	X ₁₃ - Training
X ₅ -Economic status		X ₁₄ - Mass media exposure

It could be observed that in the final step, seven variables included were explained more than 71 per cent of the variation in the entrepreneurial behaviour. These seven variables were age, scientific orientation, vocational diversification, self-confidence, competition orientation, rational orientation and mass media exposure.

The discussion on the salient results is presented below

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1. Age

The results of the study reveals that age was found to be influential on the entrepreneurial behaviour of farmwomen in livestock enterprise. The age of the farmwomen reflect the level of entrepreneurial behaviour and also her interest and involvement in enterprise. The influence of increase in age may be attributed to the gain in experience and practical knowledge and wisdom over a period of time. The finding is supported by Jayalekshmi (1996). But this increase is not static as revealed by Raghavacharyulu (1983), who observed that the large farm business by those operated by younger operators were more likely to expand since they were generally more energetic, change prone, progressive and innovative than older ones.

On the basis of common sense and the results reported by other researchers, the present finding is quite justifiable.

2. Scientific orientation

A farmwoman in livestock enterprise with good scientific orientation will eschew old, traditional practices to adopt improved technology. Scientific orientation makes one more progressive and drives her to participate in more extension programmes for gaining latest knowledge, which in turn motivate her to be more entrepreneurial.

This finding is in accordance with Gowda (1978) who found a positive relation between the level of scientific orientation and the entrepreneurial behaviour of extension clientele. The report of the Porchezian (1991) has also confirmed the findings of this study.

3. Vocational diversification

The results reinforced the importance of vocational diversification in relation to entrepreneurial behaviour among women in livestock enterprise. The vocational diversification serves as an indirect shock absorber for managing possible risks in the livestock enterprise. Sadangi (1991) found similar results that the persons who are fully employed in farming, due to possession of more farm power and more area under cash crops can very well diversify in the area of agro-industry, dairy, poultry, sheep and goat rearing to supplement the income. He also found that diversifiers preferred more calculated risk than the non-diversifiers. The results obtained thus probably could be substantiated based on these facts. This finding agrees with the results reported by Chandramouleeswaran (1987) and Zahir (1994).

4. Self-confidence

Self-confidence enables the farmwomen to critically review their own strengths, abilities and resourcefulness to perform an activity, which they desire to undertake. This could be supported by the 'theory of self fulfilling prophecy' put forth by Devito (1985), according to that, a person who is optimistic in his life and confident about his future will be striving for better performance in his life. This attitude will be reflected in all forms of his activities. The finding of this study also agrees with the results reported by Loganathan (1988) and Naik *et al.* (1990).

5. Competition orientation

Entrepreneurs with high competition orientation normally desire extrinsic concomitants, not much for their material value, but for their symbolic value namely prestige, power and self-esteem to demonstrate their success. Though, material value of making profit is the main concern for the entrepreneurs, the symbolic value provides a sense of satisfaction and encouragement to the entrepreneurs. The livestock farmwomen who really aim to attain the symbolic values will necessarily have competition

orientation. Gregg (1985) and Naik *et al.* (1990) also had obtained similar results regarding competition in relation to entrepreneurial development.

6. Rational orientation

Rational orientation of an entrepreneur is sine-quo-non if she has to succeed in taking up and managing an enterprise. An entrepreneur with high rationality always analyses the things for her improvement. From her past experience, a rational entrepreneur who had obtained good business performance as a result of high entrepreneurial behaviour will be quite convinced about the benefits of scientific advances and this behaviour is likely to be reinforced and repeated by that entrepreneur. These drives support from the law of result or achievement in the learning process. This finding is in line with findings of Senthilvinayagam (1999).

7. Mass media exposure

Mass media exposure emerged as an important attribute in determining the entrepreneurial behaviour. The results indicate that those farmwomen in livestock enterprise utilised more number of mass media sources and imbibed more entrepreneurial behavioural qualities than those who utilised less.

The findings of Raghavacharyulu (1983) is worth to be mentioned here which could be further analysed, with the help of 'information threshold theory' proposed by Gaikwad, (1968). The higher exposure of an individual to different information sources may enable her to compare the various technologies and select and utilise the most rational and appropriate technologies suited to her. The finding is also in accordance with the findings of Nandapurkar (1982) and Kokate and Nand (1991).

4.5 CONSTRAINTS PERCEIVED BY THE LIVESTOCK FARMWOMEN WITH REFERENCE TO ENTREPRENEURIAL BEHAVIOUR

The constraints perceived by the entrepreneurs that hindered the development of their enterprise and thus stood as an obstacle to foster entrepreneurship are presented in Table 12.

TABLE 12
CONSTRAINTS PERCEIVED BY THE LIVESTOCK FARMWOMEN
(n = 300)

S.No.	Constraints	Mean score	Position
1.	Financial	4.56	I
2.	Marketing	3.54	II
3.	Labour	3.23	III
4.	General /personal	2.94	IV
5.	Technical	2.08	V

A perusal of Table 11 enables one to comprehend the gravity of the problems and constraints encountered by livestock farmwomen while running an enterprise. It is very much clear from the Table that the most crucial factor which constraints the entrepreneur was the source of finance followed by marketing, labour, general / personal and technical constraints.

The nature of difficulties / problems expressed in the constraints are presented in Tables 13 to 17.

4.5.1 Financial constraints

The Table 13 presents the financial difficulties as perceived by the farmwomen in livestock enterprises. Investment stood out as a major constraint followed by working capital and financial support from institutions.

TABLE 13
FINANCIAL CONSTRAINTS

(n= 300)

S.No	Difficulty	Mean score	Position
1.	Investment	4.80	I
2.	Working capital	4.60	II
3.	Financial support from institutions	4.29	III

Lack of sufficient money during initial stage as working and fixed capital to start and run an enterprise also hampers the growth and diversification of livestock enterprise, since the financial help from government in the way of loans and subsidies meant exclusively for livestock farmwomen are very meager. To aggravate the situation further, the procedures and formalities of availing these financial assistances on collateral security are very cumbersome. Same kind of financial constraints were reported by Sundaram (1998), Singh (1992), Kumar (1995) and Jayalekshmi *et al.* (1997).

4.5.2 Marketing constraints

The Table 14 highlights the marketing problems experienced by the women in livestock enterprise. While viewing the difficulties in marketing, the most important constraint faced by the livestock farmwomen was competition from established and large units followed by lack of marketing experience and difficulty in getting money from buyer after sale.

Competition from established and large units was the serious difficulty faced by the entrepreneurs. The large farmers are selling their products directly to the consumers either via their own outlets or through door delivery. Since there is no middlemen, they are selling at cheaper price than the small and marginal farmers.

MARKETING CONSTRAINTS

(n = 300)

S.No.	Difficulty	Mean score	Position
1.	Competition from established and large units	3.87	I
2.	Lack of marketing experience	3.44	II
3.	Difficulty in getting money from buyer after sale	3.31	III

In this age of highly sophisticated market competition and many other tactics of incentives these small entrepreneurs who are striving, find it very difficult to sell their produce. Moreover, the small entrepreneurs are not ready to face the problems involved in direct marketing because of lack of time and labour to attend the farming and marketing simultaneously. Same kind of marketing problems were reported by Sundaram (1998) and Jayalekshmi (1996).

4.5.3 Labour constraints

The major difficulties related to labour as perceived by the farmwomen in livestock enterprise were the problems of high labour cost, labour management and lack of skilled labour (Table 15). The bargaining power of the labour class is higher and the terms and conditions demanded by the labourers make the work environment very strained which in turn leads to high labour cost.

Hiring of labour and handling them successfully on a day-to-day basis is often difficult for a woman entrepreneur. It does not mean that they lack the requisite skill, tact and patience to interact with men. The fact is that the male subordinates and workers always try to take advantage of the women boss.

TABLE 15

LABOUR CONSTRAINTS

(n = 300)

S.No.	Difficulty	Mean score	Position
1.	High labour cost	3.51	I
2.	Labour management	3.22	II
3.	Lack of skilled labour	2.95	III

Lack of skill and training on the part of labourers also leads to the under utilisation of the business capacity and non-profitability of the enterprises. The low esteem attached to farmwomen is one of the major reasons behind this scarcity. Further, this leads to the condition where the women entrepreneurs are forced to show undue favour in terms and conditions so as to retain them. Thus, the problems of labour management as well as non-availability of labour aggravate the production problems in livestock enterprise. This definitely causes under utilisation of business capacity which are labour demanding in general. Lack of training on management aspects of the enterprises among the farmwomen in livestock enterprise was another major problem. It was observed that none of the farmwomen had received labour management training from any of the entrepreneurial training organisations. Same kind of labour problems were reported by Singh (1992) and Sreen and Sreen (1992).

4.5.4 General / personal constraints

Table 16 presents the difficulties perceived by the farmwomen in livestock enterprise in relation to general / personal constraints. Among general ones, excessive burdens of work and excessive tension and challenge were perceived as serious constraints.

TABLE 16
GENERAL / PERSONAL CONSTRAINTS

(n = 300)

S.No.	Difficulty	Mean score	Position
1.	Excessive burden of work	3.25	I
2.	Excessive tension and challenge	3.20	II
3.	Lack of leisure time	2.91	III
4.	Health problems	2.86	IV
5.	Lack systematic planning and working	2.49	V

Farmwomen working in farm activities do them after the house hold activities, so naturally it gives more burden and excessive tension to women entrepreneurs and make them difficult to cope up with situation. This study is also in line with the findings of Singh (1992).

4.5.5 Technical and managerial constraints

Among the difficulties experienced related to technical and managerial assistance, ineffective consultancy services provided by the government agencies was perceived as the most important one followed by non availability of skilled workmen, highly expensive consultancy services of private agencies and non availability of efficient managers (Table 17).

TABLE 17
TECHNICAL AND MANAGERIAL CONSTRAINTS

(n=300)

S.No.	Difficulty	Mean score	Position
1.	Ineffective consultancy services provided by the government agencies	2.29	I
2.	Non-availability of skilled workmen	1.95	III
3.	Highly expensive consultancy services of private agencies.	2.21	II
4.	Non-availability of efficient managers	1.87	IV

There are many livestock enterprise promoting institutions viz. Veterinary University, Department of Animal Husbandry, Department of Agriculture, Agricultural University, District Industries Centre, NGO's, etc. But majority of the livestock farmwomen was not satisfied with the nature and quantum of assistance provided to them. Organised technical guidance together with coordinated services are crucial inputs and it should be enriched with management component to develop the livestock farmwomen as entrepreneurs. Skill training is also essential for the labourers to enhance their efficiency. This study is also in line with the findings of APO (1992), Srivastava (1994) and Sundaram (1998).

4.6 STRATEGIES FOR ENTREPRENEURSHIP DEVELOPMENT OF FARMWOMEN IN LIVESTOCK ENTERPRISE

The new economic situations, after implementation of General Agreement on Tariff and Trade, warrant qualitative as well as quantitative improvement in farm sector to meet the global standards. Further, due to the vast development in urbanisation and industrialisation, farm sector attracts much attention of trained manpower to overcome the shrinkage of resources. Most of the manpower engaged in the livestock sector is

female work force. In this context, the present study throws light on certain areas which need immediate attention of the policy makers to evolve strategies to tackle the short comings. The findings of this would be helpful for the policy makers to draw suitable strategies for development of farmwomen in livestock enterprise.

Education is an important component to successfully run an enterprise, since educated women have greater access to different information sources and have greater capacity to grasp new things. Livestock enterprise is not an exception. So efforts must be taken to impart non-formal education to the non-literate farmwomen for successful communication and dissemination of new technologies.

Most of the farmwomen have not solely been engaged in animal husbandry activities. So any programme which will be taken up for farmwomen involved in livestock enterprise would be taken care of allied activities also.

It is evident from the study that majority of the farmwomen in livestock enterprise having medium level of scientific orientation. This affective component is essential before adoption of any innovation. So educational efforts would be made to orient the farmwomen think scientifically before adoption or rejection of technologies / practices.

Regarding self-confidence, to mobilise the farmwomen from medium to high level of self-confidence, programmes aimed at development of entrepreneurs would be included provision of rewards / incentives for positive behaviours which in turn boost the morale of the entrepreneurs. To increase the self-confidence of the entrepreneur development curriculum would also include personality development courses.

Livestock enterprise cannot sustain without the help of other supportive systems and functional efficiency of the livestock enterprise is directly related to closeness with support systems. This study finding revealed that nearly half of the farmwomen yet to

seek help from support systems. Thus, efforts must be taken to persuade the farmwomen to perceive the extension organisation credible in providing support and services.

Majority of the livestock farmwomen having medium level of competition orientation. To increase the comparative spirit they should be shown scope for improvement in livestock sector. The performance of the entrepreneurs would be compared and presented to them. Mass media or meeting would be utilised for this purpose.

Although most of the entrepreneurs having medium to high level of credit orientation, credit facilities offered to the entrepreneurs was very less as revealed by financial constraints. The credit facilities rendered to the farmwomen were by financial institutions like NABARD and limited number of commercial banks. Thus, special attention would be given to remove the red tapism and easy access to the credit facilities.

As most of the farmwomen were literate they had high level of rational orientation. Superstitions are delicate issues to be reckon with. These are intermixed with socio cultural values. Thus, rationalisation should be brought in by persuasion rather than coercion.

Training is a crucial and important component to any entrepreneur who wants to excel in her enterprise. This is applicable to livestock farmwomen also. But the findings of the present study indicate it was grossly neglected. So there is need to encourage, motivate the entrepreneurs to participate training organised by KVKs, SAUs and other agencies involved in this endeavour.

Mass media like Television, Radio, Newspaper etc., are important channels through which entrepreneurs get to know the existence of the innovations. It contributes significantly to the development of entrepreneur and it would be utilized to the maximum

extent. Curriculum for entrepreneur development would be incorporated with the use of new information gadgets like operation of computer, internet etc.,

The present study revealed that most of the livestock farmwomen were possessed low to medium level of knowledge. So emphasis would be given to information regarding availability of finance, marketing and supplies and services of extension organisations in the curriculum developed for entrepreneurs and it would also disseminated through mass media.

Results indicated that the leadership ability and decision making were not up to the desired levels. Decision-making is an important stage, which precedes action. Entrepreneurs are expected to weigh the options, which accrue maximum benefit to the enterprise. Leadership is also an essential management component to get the things done by others, smoothly and efficiently. Thus entrepreneurs would be given trainings in the area of decision- making, leadership development, human relation etc.,

Finance and marketing were the important constraints as perceived by the livestock farmwomen, which need to be addressed strongly as they have direct and immediate bearing on the performance of the livestock enterprise. Effort must be taken by the government to provide remunerative prices and assured market for their produce.

Drudgery reduction is important as far as labour constraint is concerned. In the era of industrialisation it is difficult to find enough labour to livestock enterprise. So introduction of partial mechanisation in as many areas as possible is the best available solution. For that the government should encourage partial mechanisation by providing financial and technical assistance. Partial mechanisation helps to increase productivity, reduce the wastage, loss of time and money, and to improve the rural economy. Proper extension network is essential to tackle technical constraints related to livestock enterprise. For that sufficient number of women extension personnel would be recruited for the easy and uninhibited access of the extension system by livestock farmwomen.

Summary and Conclusions

CHAPTER V

SUMMARY AND CONCLUSIONS

The most important means of achieving improvement in the status of farmwomen would be to secure for them a fair share of employment opportunities. In most of the developing countries, greater emphasis is laid on the need for development of rural women and their active involvement in the mainstream of development. In India too, sincere and continuous efforts are being made by the government to improve the status of rural women. Changes are taking place in the status of women that give them control over their income and self-confidence.

Agriculture is considered as a least profitable venture due to the pressure on land, uncertainties of monsoon and fragmentation of land. Animal husbandry assumes a pivotal role due to transitional status of subsidiary occupation to a main occupation.

In recent years, women entrepreneurship was attracting the attention of the social researchers and the present study is an effort to gain insight into the livestock farmwoman entrepreneur. Hence the present research was designed to fill up the gap in the study of entrepreneurial behaviour of farmwomen in livestock enterprise since the development of women is the primary concern and their important role in the progress of rural economy.

Specific objectives of the study

1. To measure the entrepreneurial behaviour of farmwomen in livestock enterprise
2. To identify the relative importance of different components of the entrepreneurial behaviour
3. To study the relationship between entrepreneurial behaviour and personal, social and economic characteristics of farmwomen in livestock enterprise
4. To identify the constraints faced by the farmwomen entrepreneurs and to suggest strategies for entrepreneurship development

Namakkal taluk of Namakkal district in Tamil Nadu was selected for the study as it ranks first in livestock population engaging maximum number of farmers in livestock enterprise. Farmwomen involved in livestock enterprise of Namakkal block constitute the sampling unit. The village panchayats were arranged in descending order based on the number of livestock farmers. The top 30 village panchayats were selected. Ten farmwomen were selected from each panchayat randomly making the total sample size of 300 farmwomen. Data were collected by using a well structured, pre-tested interview schedule. The data collected were analysed with the help of suitable statistical tools.

5.1 FINDINGS OF THE STUDY

Majority of (71 per cent) the livestock farmwomen had moderate to very high entrepreneurial behaviour.

The important components of entrepreneurial behaviour identified were risk orientation, achievement motivation, economic motivation, management orientation, innovativeness and initiative.

More than 50 per cent of the livestock farmwomen belonged to middle age group and remaining belonged to young (29 per cent) and old (18 per cent) age groups.

Majority of the respondents were literate. A high proportion of the respondents had primary (32.67 per cent) and high school (30.66 per cent) education and only 17.33 per cent of the respondents had college education.

Nearly 85 per cent of the respondents had animal husbandry as a subsidiary occupation and only 15 per cent of entrepreneurs had livestock as their primary occupation.

More than three-fourths of the respondents (85.6 per cent) had medium to low level of annual income while the rest of them had high annual income.

Half of the total respondents belonged to medium economic status followed by low (41.66 per cent) and high (8.34 per cent) economic status.

More than three-fourths of the respondents (77 per cent) had medium level of scientific orientation followed by low (16.33 per cent) and high (6.66 per cent) levels of scientific orientation.

Almost equal proportion of the respondents possessed medium level (39.67 per cent) and high level (36.67 per cent) of self-confidence while 23.67 per cent of them had low level of self-confidence. Majority of the respondents (62 per cent) had high level of closeness with livestock and industrial support system whereas medium and low levels of closeness were possessed by 23 per cent and 15 per cent of them respectively.

A fairly high proportion of the respondents (62 per cent) had medium degree of competition orientation whereas 28.33 per cent and 9.67 per cent had high and low degrees of competition orientation respectively. An equal proportion of respondents (34.33 per cent) had high and low levels of credit orientation. More than half of the total respondents (60 per cent) had medium level of rational orientation while 31 per cent and 9 per cent had high and low levels of rational orientation respectively.

Majority of the respondents (83.33 per cent) had not undergone any training related to their enterprise. More than half of the total respondents (53.34 per cent) had medium level of mass media exposure while 30.66 per cent and 15.99 per cent had low and high levels of mass media exposure respectively.

Correlation analysis indicates that out of 14 independent variables selected for this study, 10 variables namely education, annual income, economic status, scientific orientation, self-confidence, closeness with livestock and industrial support system, competition orientation, credit orientation, rational orientation and mass media exposure were found to be significantly and positively correlated with entrepreneurial behaviour of farmwomen.

The results of multiple linear regression analysis indicate that five variables, which significantly contributed to entrepreneurial behaviour of farmwomen were age, scientific orientation, self-confidence, competition orientation and mass media exposure.

The step down regression analysis indicates that more than 71 per cent of the total variation in the entrepreneurial behaviour was explained by seven variables together namely age, scientific orientation, vocational diversification, self-confidence, competition orientation, rational orientation and mass media exposure.

The most serious constraints perceived by the farmwomen in livestock enterprise was the source of finance followed by marketing, labour, general / personal and technical constraints.

5.2 IMPLICATIONS OF THE STUDY

The study brings to focus the entrepreneur behaviour of farmwomen in livestock enterprise. The problems identified would help extension personnel in taking steps to strengthen the extension service in areas where the entrepreneurs exhibit weakness as revealed by the study.

The findings revealed that women of middle age group and literate showed more inclination towards innovativeness than other two groups. Hence this group of women would be first identified to impart knowledge and training, who can act as catalyst in motivating other women through interpersonal contacts to become women entrepreneurs.

As mass media exposure among livestock farmwomen was medium to low and majority of them were literate, the government would facilitate access to mass media like

Television, Newspaper etc. Training to use of modern communication gadgets like computer may be included in curriculum to be developed for entrepreneur.

It was evident from the study that majority of livestock of farmwomen had not undergone any training. Thus, training to farmwomen in areas such as management of farm, different farm practices and marketing would be taken up.

Marketing is another area found to be weak. It necessitates setting up of co-operatives exclusively for women entrepreneurs to market their produce in line with dairy co-operatives. These co-operatives would be empowered with identifying entrepreneurs and distribution of loan. Dissemination of market information is need of the hour.

Strict rules and regulation, followed by commercial bankers, would be revised to facilitate easy access to these financial sources by livestock farmwomen. The financial institution at the national and state level would be restructured and strengthened by the government to provide equity loans to livestock enterprise units through District Industrial Centres (DIC) based on feasibility studies. Further, it would be of great help to the farmwomen if the government introduces the single window system, which would help the entrepreneurs to complete initial formalities of taking up loans without much problems and delay.

Large proportion of livestock farmwomen's scientific orientation, self-confidence, competition orientation and rational orientation were found to be low to medium. So importance would be given to these areas while developing training modules for the farmwomen entrepreneurs.

5.3 FUTURE FOCUS OF RESEARCH

1. The present study was conducted on a limited area. To generalise the findings, it is necessary to carry out similar research over wide area under varied socio-economic conditions.
2. It is worthwhile to conduct separate studies on entrepreneurial behaviour of farmwomen engaged in various livestock enterprises like dairying, sheep and goat farming, piggery and poultry.
3. To compare the entrepreneurial behaviour of farmwomen with men, similar studies may be carried out involving male entrepreneurs.
4. Many other components, not covered in the present available index on entrepreneurial behaviour, may be incorporated to construct and standardise entrepreneurial behaviour index.
5. Case studies may be taken up involving few successful farmwomen entrepreneurs to have an in depth analysis of components which contributed for their success.

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* Originals not found

Appendices

APPENDIX-I**TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY**

Dr. R. Krishnaraj, Ph.D.
Professor.

Department of Extension,
Madras Veterinary College,
Chennai - 600 007.

Dated:

Dear Sir / Madam,

One of my students, Dr.N.Narmatha is undertaking a study entitled "Entrepreneurial behaviour of farm women in livestock enterprise" as part fulfillment of her Ph.D. programme under my guidance. The main objective of her study is to measure the entrepreneurial behaviour of farmwomen and also to study the relationship between entrepreneurial behaviour and personal, social and economic characteristics of farmwomen. In this context she has identified certain dimensions/variables in relation to entrepreneurial behaviour.

Considering your rich experience and expertise, you have been identified as a judge for rating the relevancy of the list of dimensions/variables furnished in the enclosed appendices (Appendices Ia and Ib). You may please indicate your opinion about the inclusion of each variable in the study by marking (✓) against each variable under the appropriate column. You can also add other variables, which you think are related and also rate them under the appropriate column.

I am aware that, you have a busy schedule. Yet I hope that you will kindly spare sometime for us. Your kind and early action in this matter would greatly help us to complete the study in time. Please return the duly filled annexure to the address indicated in the envelope at the earliest.

Thanking you.

Yours faithfully,

Dr. R. Krishnaraj, Ph.D,
Professor of Extension,
Madras Veterinary College,
Chennai-7.

To

APPENDIX-I (a)

DIMENSIONS OF ENTREPRENEURIAL BEHAVIOUR

The possible dimensions of entrepreneurial behaviour of livestock operators are listed below. The dimensions have been identified through review of related literature and discussion with experts. The relevancy of including these dimensions in measuring the entrepreneurial behaviour may be marked by a (✓) in the appropriate column.

S. No	Dimensions of entrepreneurial behaviour	Relevancy				
		Most relevant	More relevant	Relevant	Less relevant	Least relevant
1	Innovativeness					
2	Decision making					
3	Achievement motivation					
4	Risk orientation					
5	Level of aspiration					
6	Entrepreneurial knowledge					
7	Management orientation					
8	Ability to co-ordinate livestock activities					
9	Leadership ability					
10	Economic motivation					
11	Personal efficacy					
12	Cosmopolitaness					
13	Information seeking behaviour					
14	Locus of control					
15	Initiativeness					
16	Self-reliance					
17	Self-concept					
18	Any other(Please specify)					

APPENDIX-I (b)

The following are the independent variables identified. Kindly rate the relevancy by marking (✓) in the appropriate column.

S. No	Variables	Relevancy				
		Most relevant	More relevant	Relevant	Less relevant	Least relevant
1	Age					
2	Age at entry					
3	Education					
5	Family background					
6	Family size					
7	Farm size					
8	Annul income					
9	Occupational status					
10	Labour availability					
11	Family labour utilisation					
12	Economic status					
13	Mass Media exposure					
14	Scientific orientation					
15	Indebtedness					
16	Closeness with livestock and industrial support system					
17	Self-confidence					
18	Overall modernity					
19	Deferred gratification					
20	Vocational diversification					
21	Credit orientation					
22	Rational orientation					
23	Training					
24	Competition orientation					
25	Any other(Please specify)					

Signature with Official address

APPENDIX -II

ITEMS SELECTED FOR ENTREPRENEURIAL KNOWLEDGE TEST

Sl.No.	Items	Difficulty Index	Discrimination index
1.	Enlist any three enterprises in animal husbandry you are aware of,,	100.0	0.0
2.	Can you name a livestock product produced extensively in your locality for sale rather than consumption in the family?	100.0	0.0
3.*	Name two officials who help and guide to establish an enterprise.....	76.7	0.4
4.	Where is co-operative service society located?	100.0	0.0
5.	What is the basic objective of K.V.K ./ DIC ?	93.3	0.1
6.	Where is DRDA office located?	0.0	0.0
7.	Where is the nearest commercial bank situated?	100.0	0.0
8.	How can banks help you to establish an enterprise?	100.0	0.0
9.*	Name two organisations which are concerned directly with imparting entrepreneurial development training in your locality?	46.7	0.7
10.	What are the primary sources of credit ?	86.7	0.2
11.*	How much the co-operative societies / provides as a loan for establishing the enterprise?	66.7	0.5
	i) Total unit cost		
	ii) Less than unit cost		
12.	Can you tell the procedure to purchase the inputs from DIC ?	76.7	0.2
13.	What is the interest rate of commercial bank for animal husbandry loan?	93.3	0.0
14.	Name two government programmes under which facilities for establishing livestock enterprises are provided?	46.7	0.2
15.	State any three essential factors to be taken into consideration while selecting enterprises ?	60.0	0.2
16.*	It is advisable to start with a project only because some one else is doing well or some one has assured you to decide your project. Correct / Incorrect	53.3	0.6

17.	Which of the following statements is not an essential characteristic of business? (1) Profit motive, (2) Dealing in goods and services, (3) Black-marketing,(4) Elements of risk	100.0	0.0
18.*	If return on investment is lower than bank rate of interest money should be kept in bank rather using a business enterprise. True / False	73.3	0.4
19.	If return on investment in project 'A' is 18% and in project 'B' is 32% which is preferable from financial point of view?	80.0	0.3
20.*	Where is NECC / TCMPPF / Veterinary hospital / Veterinary College situated ?	40.0	0.4
21.	District with highest production of your enterprise in Tamil Nadu.	66.7	0.3
22.	What is the basic objective of NABARD?	6.7	0.2
23.	For marketing egg and culled birds, farmers mainly depend on traders. If the entrepreneurs tries to market directly, will they succeed or not?	73.3	0.3
24.*	Can profitability of the unit be improved, if the location of the unit is near the sources of various inputs and market? Yes / No	76.7	0.4
25.	Market analysis determines whether the product can be sold in the market being analysed ? Yes / No	100.0	0.3
26.	Name three important factors to be studied while conducting market survey?	10.0	0.3
27*	To have a competitive sale of price, the entrepreneur should ensure that the product is less / more	50.0	0.6
28.	A majority of the reasons that cause failure can be avoided if you have in advance surplus finance / proper planning. Yes / No.	93.3	0.1
29.*	How will you analyze the success or failure of your enterprise?	43.3	0.9
	1. Based on the expenditure-income register		
	2. Based on the amount in hand		
30.*	Name two essential account books / files required to be maintained in your enterprise.	53.3	0.9
	1....., 2.....		

* Items selected for entrepreneurial knowledge

**TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY
VETERINARY COLLEGE AND RESEARCH INSTITUTE**

**Department of Extension Education.
NAMAKKAL.**

**Entrepreneurial Behavior of Farm Women in Livestock Enterprise
Interview schedule**

District:
Block :

Name of the entrepreneur:
Name of the enterprise:
Address:

**PART-I
Particulars Relating to Entrepreneur**

1. AGE At present Years

2. EDUCATION

Illiterate / Can read only / Can read and write /
Primary / Middle / High / College and Above

3. OCCUPATIONAL STATUS

Primary (main) occupation:
Subsidiary occupations :

4. ANNUAL INCOME:

From the enterprise Rs.....
From other sources Rs.....

5. ECONOMIC STATUS

A. House type:

Thatched / Tiled / Terraced

Worth (Rs.)

B. Material possession:

No. Cost

a) Enterprise related

b) General

- Two Wheeler
- Four Wheeler
- Tape recorder
- Telephone
- LPG Cylinder
- Other (specify)

C. Fixed assets position:

- Land
- Building
- Machinery

6. SCIENTIFIC ORIENTATION

Adoption of new methods in a enterprise increases the income of the entrepreneur. Here, six statements will be read out, please give your agreement, disagreement or undecidedness about each of the following statements.

- SA- Strongly agree
- A - Agree
- UD- Undecided

- DA – Disagree
- SDA- Strongly Disagree

Statements	SA	A	UD	DA	SDA
1. New methods in enterprise give better results to entrepreneur than old methods					
2. The way the forefather managed an enterprise is still the best way today also					
3. Even an entrepreneur with lot of experience should use new methods					
4. A successful entrepreneur experiments with the new ideas					
5. Traditional methods in any enterprise have to be changed in order to raise the level of living of entrepreneur					
6. Though it takes time for an entrepreneur to learn new methods in enterprise, it is worth the efforts					

7. VOCATIONAL DIVERSIFICATION

1. a) Besides enterprise, do you have any other source of income? Yes / No.
b) If yes, what is/ are the source(s) of income?
2. a) Please give the following details of the sources of your income

Source/ Occupation	Special feature if any	Investment	Income	Year of start	Who is engaged?

- b) Did you have any other source(s) of income earlier ? Yes/No
If yes please give the following details.

Source/ Occupation	Special feature if any	Investment	Income	Year of closing	Reasons for closing

8. SELF-CONFIDENCE

Please answer whether the following statements are 'True' or 'False' in your case.

- 1 I have a fear of failing in anything I want to accomplish T / F
- 2 I feel insecure within myself T / F
- 3 I can face a difficult situation without worry T / F
- 4 I am hesitant about taking decisions T / F
- 5 I frequently feel unworthy T / F
- 6 I can adjust readily to new situation T / F
- 7 I am usually discouraged when the opinions of other differ from my own T / F
- 8 I have several times given up doing a thing because I thought too little of my ability T / F
- 9 I find it hard to keep my mind on a task or job T / F
- 10 I have enough faith in my ability T / F

9. CLOSENESS WITH LIVESTOCK AND INDUSTRIAL SUPPORT SYSTEM

Please indicate the extent to which you are in contact with the following personnel.

S.No.	Personnel	Most often	Often	Sometimes	Never
1.	Officers of department of Animal Husbandry				
2.	Scientists of Veterinary University				
3.	Officers of TCMPU LTD				
4.	Panchayat officials				
5.	Personnel in co-operative society				
6.	Insurance agents				
7.	Marketing personnel				
8.	Others (specify)				

10. COMPETITION ORIENTATION

What is your degree of agreement for the following statements?

S.No.	Statements	SA	A	DA	SDA
1.	The key points of success in an enterprise should not be divulged to other people.				
2.	A higher profit in comparison to the neighbours brings more prestige.				
3.	It is of no use to keep information on what other people are doing				
4.	Competitions should be organised on all important enterprises				
5.	Better operation provides opportunity for recognition by the extension officers				
6.	It is not good for an entrepreneur to become too ambitious in life.				

11. CREDIT ORIENTATION

1. If one need loan, what are the sources or institutions in your locality to obtain loan for establishing enterprise?

- a) Banks b) Co-operatives c) Money lenders
d) Friends e) Block office f) Relatives g) Others (specify)

2. Have you ever taken loan for purchase of inputs ? Yes / No.

- a) If No,
 (i) Why?
 (ii) Have you ever thought of taking loan ? Yes / No
 (iii) Have you ever tried to take loan ? Yes / No
 If yes, what did you do and what happened?

b) If yes, in Q.2,

I. When and from which source? Please give the details for the last three years?

Institution	Nature of loan taken	Purpose	Amount received

II. Have you repaid the loan that you had taken ? Yes/No

- a) If No, what was the reason ?
 b) If yes.

Source	Nature of loan taken	Amount received	Time of return	Amount repaid	Remarks

- c) When you need loan whether you take from the above mentioned institutions or you have left taking loan?
 d) If you have left taking loan, what are the reasons?
 e) What is your experience about the loan facility ? What are the advantages and disadvantages ?

Advantages

Disadvantages

Remarks

12. RATIONAL ORIENTATION

What do you feel about the increased income and improvement in life ?

- a) Belief in stars and not in scientific recommendations
 b) Belief in stars and scientific recommendations
 c) Belief only in scientific recommendations

13. TRAINING

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Have you participated in any training programmes ? Yes / No.
If yes, please give the details

Name of Training undergone	Name of institution	Purpose of training	Duration	Utility
----------------------------	---------------------	---------------------	----------	---------

14. MASS MEDIA EXPOSURE

Do you make use of any of the following sources for obtaining technical information related to your enterprise:

S.No.	Particulars	Yes / No	If yes, always / sometimes
1.	Television		
2.	Radio		
3.	Newspapers		
4.	Farm magazines		
5.	Video cassettes		
6.	Exhibitions		
7.	Others (specify)		

PART -II**Components of Entrepreneurial Behaviour****1.INNOVATIVENESS**

Three statements at a time will be read out. Please hear these statements carefully and indicate one statement out of the three you hear that is “most like” you and also find another statement out of the same that is “least like” you (Response to be circled)

1. a) I try to keep myself up to date with information on new practices, but that does not mean that I try out all the new methods on my enterprise
 b) I feel restless till I try out new practices I heard about
 c) They talk of many new practices these days but who knows if they are better than the old one
2. a) From time to time I have heard of several new practices related to enterprise and I have tried out most of them in the last few years.
 b) I usually wait to see what results my neighbours obtain before I try out the new practices.
 c) Somehow I believe that the traditional ways of different practices are the best
3. a) I am cautious about trying of new practices
 b) After all, our forefathers were wise in the traditional practices and I don't see any reason for changing these old methods.
 c) Often new practices are not successful, however, if they are promising I would surely like to adopt them.

2. DECISION MAKING

Please tell whether you have taken decision for each of the following in your enterprise. If yes, was the decision taken on your own or in consultation with others?

S.No.	Decisions criteria	Not considered	Considered after consultation with others	Considered independently
1.	To try new methods			
2.	Borrow money for the enterprise			
3.	To buy equipment			
4.	Choose kind of inputs			
5.	To attend Meetings / seminars			
6.	Subscribe to farm publications			

7. Hire farms workers
 8. To try new practice in enterprise
 9. To increase or decrease the size of enterprise
 10. To switch over to new enterprise
-

3. ACHIEVEMENT MOTIVATION

Please complete the sentences by choosing the appropriate answers.

1. In whatever work I undertake on my farm,
 - a) I like to do depending on my mood
 - b) I like to do my best
 - c) I do not assume full responsibility for it

2. I am always keen
 - a) To maintain the social status
 - b) To project my image
 - c) To develop my qualification

3. I feel happy when
 - a) Others tell about my personal experience
 - b) I am assigned a difficult job
 - c) I am required to give advice to others.

4. My secret ambition in life is
 - a) To deal a happy married life
 - b) To establish a glorious record of achievement
 - c) To own a large farm unit

5. I like to venture something which
 - a) Others can hardly do
 - b) Will make one wealthy
 - c) Others regard as quality of leadership.

4. RISK ORIENTATION

Kindly give your agreement or disagreement about each of the following statements.

S.No.	Statements	SA	A	UD	DA	SDA
1.	An entrepreneur should have more number of enterprises to avoid greater risk involved in having one or two.					
2.	An entrepreneur should take more of a chance in making a big profit than to be content with a smaller but less risky profit					
3.	An entrepreneur who is willing to take greater risk than the average entrepreneur usually does better financially					
4.	It is good for an entrepreneur to take risk when she knows her chance of success is fairly high					
5.	It is better for an entrepreneur not to try new methods in enterprise unless most others in the locality have used it with success					
6.	Trying entirely a new method in enterprise by an entrepreneur involves risk but is worth it					

5. ECONOMIC MOTIVATION

Given below are three sets of statement. In each of the set, please indicate which one of the three statement describes you 'most like' and 'least like'

S.No.	Statements	Most like	Least like
A. (1)	All I want from my enterprise is to make just reasonable living for the family		
(2)	In addition to making reasonable profit, the enjoyment in running and enterprise is also important		
(3)	I would invest in an enterprise to the maximum, to gain large profit		
B.(1)	I would not hesitate to borrow any amount of money in order to run the enterprise properly.		
(2)	Instead of going in for new enterprises which cost more money, I follow the routine enterprise		

- (3) It is not only monetary benefit but also the enjoyment of work done, which gives me satisfaction for my hard work on running an enterprise.
- C.(1) I have to borrow money on principle seven when it is necessary for properly running the enterprise
- (2) My main aim is maximizing monetary profits in enterprise by having just one in comparison to having more enterprises.
- (3) I avoid excessive borrowing of money for enterprise diversification.
-

6. ENTREPRENEURIAL KNOWLEDGE

Please answer the following:

1. Name two officials who help and guide to establish an enterprise.
2. Name two organizations, which are concerned directly with imparting entrepreneurial development training in your locality?
3. How much of bank provides as a loan for establishing the enterprise?
 - (i) Total unit cost
 - (ii) Less than the unit cost
4. It is advisable to start with a project only because some one else is doing well or some one has assured you to decide your project. Correct / incorrect
5. If return on investment is lower than bank rate of interest money should be kept in bank rather using a business enterprise. True / False.
6. Where is NECC / TCMPE / Veterinary College / Veterinary hospital of your panchayat / situated ?
7. Can profitability of the unit be improved, if the location of the unit is near the sources of various inputs and market ? Yes / No
8. To have a competitive sale of price, the entrepreneur should ensure that the product cost is less / more.
9. How will you analyse the success or failure of your enterprise ?
 - 1) Based on the expenditure –income register
 - 2) Based on the amount in hand
10. Name two essential account books/files required to be maintained in your enterprise.
 - 1).....
 - 2)

7. MANAGEMENT ORIENTATION

What is your opinion about the following statements and please state the degree of your agreement or disagreement to case of the following statement given below:

S.No.	Statements	Agree	Disagree
A. Planning orientation			
1.	Each year one should think a fresh about the performance of enterprise during the current year		
2.	It is not necessary to make a prior decision about the new product to be launched		
3.	The amount of inputs required for the enterprises shall be assessed well ahead.		
4.	It is now necessary to think ahead of the cost involved in running the enterprise.		
5.	One need not consult any expert for planning		
6.	It is possible to increase the returns through production plans		
B. Production orientation			
1.	Timely use of raw materials ensures good return		
2.	One should use as much as inputs she likes		
3.	Planning with regard to the required inputs saves money and time		
4.	There is need to take care about the quality and approved standards for produces.		
5.	Technical recommendations should be strictly followed in production.		
6.	Production factors like labour should be utilized with target of maximizing productivity.		
C. Marketing Orientation			
1.	Market use is not so useful to the entrepreneurs.		
2.	One can get good price by grading her produce.		
3.	Storing and selling the produce to the off-season can help and entrepreneur to get better price for her produce.		
4.	One should sell her produce to the nearest market irrespective of price.		
5.	One should purchase her inputs from the shop where her relatives purchase.		
6.	One should grow those crops/run an enterprise which has more market demand.		

1. All of us want to provide education to our children. But each one of us may differ with regard to the extend to education that we would expect our children to have. The levels of education are primary school (1), middle school (2), high school (3), college (4), professional and technical (5). What would be the level of education you want
 - i) Your sons to have
 - ii) Your daughters to have

2. In the same way as education, all of us want our children to get into some work after they reach a particular stage in life. For instance, there are various kinds of work, Professional (1) , Agriculture (2), Business (3), Government jobs (4). What would be the type of work you except ?
 - i) Your sons to have
 - ii) Your daughters to a have

3. Each one of us have some earnings as result of our work either monthly or yearly to sustains us through life. We also try to improve our income by various methods either by improving or extending our work. Compared with previous years, what would be the increase in the annual income (in rupees) you expect to get in the next 3 years ?

Low income than the previous year (0)

Same level of income like previous year (1)

Expecting higher income than previous year (2)

Following are a few questions about some of your professions. You may also like to improve upon it in the next few years. Please let me know what you expect to happen regarding these in the next 3 years.

4. What would you expect to be the increase in your enterprise income in the next 3 years?

Increased by

- Same income (1)
- Two times (2)
- Three times (3)
- Four times (4)
- Five times and above (5)

5. What would you expect to be the increase in the product of the enterprise in the next 3 years?

Lower than the previous year (0)

Same level like previous year (1)

Expecting more than previous year (2)

6. What would you expect to be your general contentment (satisfaction) in life in ~~next~~ ¹³³³ years?

Less satisfaction (1) / Some what satisfaction (2) / More satisfaction (3).

9. LEADERSHIP ABILITY

An entrepreneur has to take decision, get the things done, initiate the actions, motivate the follower. Here are some statements related to this aspect. Please give your response.

S.No.	Statements	Always	Some times	Never
1.	Did you participate in discussion on new practices on your enterprise in the group meeting or in peer group ?			
2.	Whenever you see a new practice did you initiate discussion about it with your colleagues?			
3.	Do the other people regard you as a good source of information on new practice?			
4.	Do you assign the enterprise work to your family members?			
5.	Do you offer new approaches to problem ?			

10. INITIATIVENESS

Please state the agreement or disagreement to each of the statement below.

S. No	Statements	Agree / Disagree
1.	I will start an enterprise only if somebody prompts me	
2.	Are you ready to join a training course, which will equal you to start an enterprise.	
3.	Will you take the initiative to form a self help group to acquitted loan form agreement to start an enterprise.	
4.	Will you go and collect information about the financial assistance given to farmwomen to start an enterprise.	
5.	Even though I am provided with all the facilities I will not volunteer to take up the enterprise.	
6.	It is only because of my own effect I have acquired sufficed knowledge to start an enterprise.	

Constraints

How do you perceive the following constraints in your enterprise, which affects the performance?

S.No.	Constraints	Most serious	More serious	Serious	Less serious	Least serious
1.	General / Personal					
	a. Excessive burden of work					
	b. Health problems					
	c. Lack of leisure time					
	d. Excessive tension and challenge					
	e. Lacks systematic planning and working					
2.	Financial Constraints					
	a. Investment					
	b. Working capital					
	c. Financial support from institution					
3.	Technical and managerial constraints					
	a. Ineffective consultancy services provided by the Govt. agency.					
	b. Highly expensive consultancy services of private agencies					
	c. Non-availability of skilled workmen					
	d. Non-availability of efficient managers					
	e. Any other					

4. Marketing constraints

- a. Lack of marketing experience
- b. Lack of marketing experience
- c. Lack of marketing experience
- d. Competition from established and large units
- e. Difficulty in getting money from buyer after sale
- f. Any other

5. Labour constraints

- a. High labour cost
 - b. Lack of skilled / trained labour
 - c. Lack of skilled / trained labour
 - d. Labour management
 - e. Any other
-

APPENDIX -IV

Independent variables selected for relevancy with their frequency and percentage

S.No.	Variables	Frequency	Percentage
1.	Age	27	72.97 *
2.	Age at entry	21	56.70
3.	Education	28	75.66*
4.	Family back ground	23	62.10
5.	Family size	8	21.60
6.	Farm size	24	64.80
7.	Annual income	29	78.30
8.	Occupational status	27	72.90*
9.	Labour availability	21	56.70
10.	Family labour utilization	19	51.30
11.	Economic Status	30	81.00*
12.	Social participation	25	67.50
13.	Scientific orientation	34	91.80*
14.	Self-confidence	34	91.80*
15.	Indebtedness	17	45.90
16.	Closeness with livestock and industrial support system	29	78.30*
17.	Over all modernity	25	67.50
18.	Deferred gratification	23	62.10
19.	Vocational diversification	29	78.30*
20.	Competition orientation	30	81.00*
21.	Rational orientation	31	83.70*
22.	Credit Orientation	29	78.30*
23.	Training	30	81.00
24.	Mass media exposure	32	86.40*

* Variables selected

APPENDIX-V

SCORING PATTERN FOLLOWED TO MEASURE CREDIT ORIENTATION

S.No.	Response	Score
1.	Borrowing and reborrowing money (cash / kind) from a public credit institution after making timely repayment	5
2.	Only borrowing money (cash / kind) and not reborrowing the same through making timely repayment.	4
3.	Borrowing money (cash / kind) from a public credit institution and reborrowed in some other firms.	2
4.	Borrowing money (cash / kind) from a public credit institution and remaining defaulter in repaying the same for long time	1
5.	Borrowing money (cash / kind) from more than one institution and repaying the loan in time	5
6.	Willing to borrow money (cash / kind) but could not borrow due to ignorance or some other reasons.	3
7.	Not willing to borrow money (cash / kind) from any public institutions due to various reasons.	3

ANNEXURE I
DISTRICTWISE LIVESTOCK POPULATION IN TAMIL NADU
(1994-95 CENSUS)

Sl.No.	District	Cattle	Buffalo	Sheep	Goat	Poultry	Total
1	Chennai	22912	29593	4276	8450	94363	159594
2	Chengalpat	781516	389030	403829	394372	1427100	3395847
3	Vellore	554932	171278	309253	215453	1003594	2254510
4	Thiruvannamalai	637490	67575	529541	331396	489542	2055544
5	Cuddalore	524451	70789	137079	243085	401502	1376906
6	Villupuram	924070	125288	244620	426399	665889	2386266
7	Salem	361894	329513	326636	433646	269693	1721382
8	Namakkal	221113	210183	140797	172996	7269080	8014169
9	Nilgiris	37062	5541	1662	2854	18521	65640
10	Coimbatore	258114	127981	119568	201649	2024886	2732198
11	Thanjavur	409105	117625	34289	457620	731623	1750262
12	Nagapattinam	472136	130313	38082	507500	811261	1959292
13	Trichy	851766	322686	812453	818477	1826418	4631800
14	Pudukottai	645514	156878	346768	149408	864675	2163243
15	Dharmapuri	410689	100395	309534	174360	796660	1791638
16	Madurai	359705	149741	221932	255621	794732	1781731
17	Dindigul	235197	112888	180262	216252	745496	1490095
18	Ramanathapuram	276764	37486	288875	157243	345554	1105922
19	Virudhunagar	110441	83049	195605	215797	504191	1109083
20	Sivagangai	298098	48033	450262	199231	485188	1480812
21	Thirunelveli	282283	180713	365996	211124	870104	1910220
22	Tuticurin	155878	51348	426603	570889	622504	1827222
23	Kanyakumari	115327	20093	1855	76125	389312	602712
24	Erode	289794	238843	367885	246112	1202673	2345307
	Total	9236251	3276862	6257662	6686059	24654561	50111395

Source: Annual Administration Report of Animal Husbandry Department.

ANNEUXRE II

BLOCKWISE LIVESTOCK POPULATION IN NAMAKKAL DISTRICT
(1994-95 CENSUS)

Sl.No.	Block	Cattle	Buffalo	Sheep	Goat	Poultry	Total
1	Namakkal	19356	16918	8775	17143	2294647	2356839
2	Mohanur	26895	30980	30501	18001	1563700	1670077
3	Rasipuram	16497	9714	4164	11337	1412000	1453712
4	Puduchatram	15075	14900	9964	12833	730000	782772
5	Vennandur	19345	14663	4975	22770	536000	597753
6	Sendamangalam	12614	8460	3723	7986	433000	465785
7	Erumapatti	15563	16662	18109	13024	243000	306358
8	Namagiripettai	27401	20838	5525	16490	21426	91680
9	Paramatti	15998	21126	13025	17521	13400	81070
10	Kabilarmalai	14395	12285	15298	10620	12500	65098
11	Mallasamudram	8706	11288	14912	3317	1726	39949
12	Elachupalayam	9613	13948	4916	6711	1413	36601
13	Trichengode	6149	8015	2618	6187	3643	26612
14	Pallipalayam	6719	9720	2965	3712	2013	25129
15	Kollihills	6785	666	1327	5344	612	14734
	Total	221113	210183	140797	172996	7269080	8014169

Source: Joint Director of Animal Husbandry, Namakkal.

Annexures

ANNEUXRE II

BLOCKWISE LIVESTOCK POPULATION IN NAMAKKAL DISTRICT (1994-95 CENSUS)

Sl.No.	Block	Cattle	Buffalo	Sheep	Goat	Poultry	Total
1	Namakkal	19356	16918	8775	17143	2294647	2356839
2	Mohanur	26895	30980	30501	18001	1563700	1670077
3	Rasipuram	16497	9714	4164	11337	1412000	1453712
4	Puduchatram	15075	14900	9964	12833	730000	782772
5	Vennandur	19345	14663	4975	22770	536000	597753
6	Sendamangalam	12614	8460	3723	7986	433000	465785
7	Erumapatti	15563	16662	18109	13024	243000	306358
8	Namagiripettai	27401	20838	5525	16490	21426	91680
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13	Trichengode	6149	8015	2618	6187	3643	26612
14	Pallipalayam	6719	9720	2965	3712	2013	25129
15	Kollihills	6785	666	1327	5344	612	14734
	Total	221113	210183	140797	172996	7269080	8014169

Source: Joint Director of Animal Husbandry, Namakkal.

ANNEXURE III

VILLAGEWISE LIVESTOCK POPULATION IN NAMAKKAL BLOCK
(1994-95 CENSUS)

Sl.No.	Village	Cattle	Buffalo	Sheep	Goat	Poultry	Total
1	Marurpatti	676	1115	185	1220	640000	643196
2	Konur	655	430	460	487	448000	450032
3	Mudalaipattai	829	890	215	1315	420000	423249
4	Keerambur	751	673	804	863	311632	314723
5	Vasanthapuram	798	441	140	615	290000	291994
6	Chinna mudalaipatti	575	940	215	870	280000	282600
7	Kavettipatti	362	366	572	406	235000	236706
8	Thindamangalam	595	398	186	360	170600	172139
9	Rasampalayam	331	358	738	431	150000	151858
10	Thottipatti	291	200	354	144	148000	148989
11	Vagurampatti	954	391	120	420	127000	128885
12	Kondichettipatti	659	847	160	1315	115000	117981
13	Keelsathambur	427	508	603	373	114000	115911
14	Namakkal	630	1079	220	850	106000	108779
15	Naravalur	511	373	173	235	97500	98792
16	Rangappanaickenpatti	423	336	146	173	74700	75778
17	Nallipalayam	595	480	30	760	70000	71865
18	Marappanaickenpatti	577	277	69	179	63400	64502
19	Thaligai	497	367	238	165	60000	61267
20	Periyapatti	191	164	377	85	58000	58817
21	Ernapuram	533	193	256	260	52000	53242
22	Siluvampatti	354	252	215	246	47000	48067
23	Kadapalli	708	1047	415	1120	44000	47290
24	Periyagoundanpalayam	483	380	97	215	38500	39675
25	Aniyar	586	428	146	176	34000	35336
26	Thummankurichi	451	235	160	267	30000	31113
27	Vallipuram	383	478	568	293	28000	29722
28	Singilipatti	591	330	184	215	26000	27320
29	Vettambadi	584	370	110	530	6000	7594
30	Avalnaickenpatti	509	681	120	460	3500	5270
31	Ayyampalayam	530	259	45	180	3412	4426
32	Chidamparapatti	861	775	179	1420	1124	4359
33	Veesanam	762	461	180	180	1292	2875
34	Vittamanaickenpatti	694	396	95	315	987	2487
	Total	19356	16918	8775	17143	4294647	4356839

Source: Veterinary Dispensary, Ernapuram.