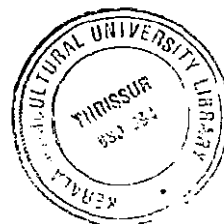


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ORGANISATIONAL BEHAVIOUR OF FARM WORKERS AS ANTECEDENT TO THE PERFORMANCE OF PIGS IN ORGANIZED FARMS

V. UMA



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

Master of Veterinary Science

**Faculty of Veterinary and Animal Sciences
Kerala Agricultural University, Thrissur**

2003

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DECLARATION

I hereby declare that this thesis entitled “**ORGANISATIONAL BEHAVIOUR OF FARM WORKERS AS ANTECEDENT TO THE PERFORMANCE OF PIGS IN ORGANIZED FARMS**”, is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award to me of any degree, diploma, associateship, fellowship or other similar title, of any other University or Society.

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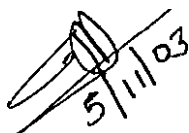
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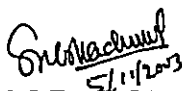
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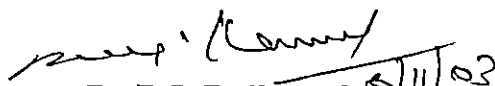
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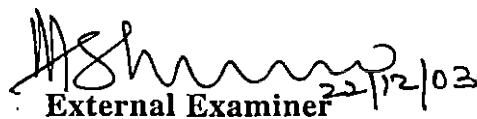
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I dedicate this work to Almighty for showering His kindness and blessings.

v. Uma
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ABBREVIATIONS

A.H.D. = Animal Husbandry Department

K.A.U. = Kerala Agricultural University

K.L.D.B. = Kerala Livestock Development Board

U.S.A. = United States of America

CONTENTS

Chapter No.	Title	Page No.
1.	INTRODUCTION	1
2.	REVIEW OF LITERATURE	4
3.	MATERIALS AND METHODS	20
4.	RESULTS	41
5.	DISCUSSION	63
6.	SUMMARY	72
	REFERENCES	75
	APPENDIX	84
	ABSTRACT	98

LIST OF TABLES

Table No.	Title	Page No.
1.	Distribution of respondents based on age	42
2.	Distribution of respondents based on sex	42
3.	Distribution of respondents based on marital status	42
4.	Distribution of respondents based on type of family	43
5.	<i>Distribution of respondents based on number of children</i>	43
6.	Distribution of respondents based on mode of transportation to work place	44
7.	Distribution of respondents based on distance to work place from residence	44
8.	Distribution of respondents based on literacy	45
9.	Distribution of respondents based on educational qualification	45
10.	Distribution of respondents based on working experience	46
11.	Distribution of respondents based on number of trainings attended	46
12.	Distribution of respondents based on source of family income	47
13.	<i>Distribution of respondents based on monthly family income</i>	47
14.	Distribution of respondents based on income from monthly wages	48
15.	Distribution of respondents based on attitude towards the job	48
16.	Distribution of respondents based on knowledge of pig keeping	50

17.	Distribution of respondents based on skill in pig keeping	50
18.	Distribution of respondents based on job satisfaction	51
19.	Job satisfaction of farm workers with respect to different aspects of job	51
20.	Distribution of respondents based on job performance	54
21.	Distribution of respondents based on absenteeism	54
22.	Kendall's tau-b intercorrelations of organisational behaviour factors	55
23.	Rank order correlation of farm workers' attitude towards the job with production performance parameters of pigs	56
24.	Rank order correlation of farm workers' knowledge of pig keeping with production performance parameters of pigs	57
25.	Rank order correlation of farm workers' skill in pig keeping with production performance parameters of pigs	58
26.	Rank order correlation of job satisfaction of farm workers with production performance parameters of pigs	59
27.	Rank order correlation of job performance of farm workers with production performance parameters of pigs	60
28.	Rank order correlation of absenteeism of farm workers with production performance parameters of pigs	61

LIST OF FIGURES

Fig. No.	Titles	Page No.
1.	Kerala map showing the organised pig farms selected for the study	21
2.	Conceptual model of the study	24
3.	Distribution of respondents based on organisational behaviour factors	49
4.	Job satisfaction of farm workers with respect to different aspects of job	53
5.	Relationship between organizational behaviour factors of farm workers and production performance parameters of pigs	62

Introduction

1. INTRODUCTION

The human-animal relationship has important implications for farm animal management. Even though the human-animal interaction, especially between the farm animals of economic importance and the stockpeople who take care of them, is considered important, only limited investigations have been carried out in this area. However, there is evidence that good stockman-animal relationship can be correlated with higher performance of animals (English *et al.*, 2002; English and McPherson, 1994; Hemsworth *et al.*, 1981a). If the stockperson's attitude towards pigs is negative, his commitment to the surveillance of and the attendance to production and welfare problems facing the pig is likely to deteriorate (Coleman *et al.*, 1998). The codes of recommendations (Anon., 1983a; Anon., 1983b) for the welfare of livestock for both cattle and pigs recognized the fact that "stockmanship is a key factor because, no matter how otherwise acceptable a system may be in principle, without competent, diligent stockmanship, the welfare of the animals cannot be adequately catered for". Considering the important influence of stockmanship in the livestock production, it is essential to establish the scientific basis of stockmanship so that the components of this resource can be measured and improved (English *et al.*, 1992; Hemsworth and Coleman, 1998).

It is important to identify those attributes of stockpeople's/farm workers' behaviour, which affect the production performance and welfare of farm animals. The intensive swine production system in organized farms involves several levels of interaction between the farm workers and the pigs and hence is a potential area for investigation in this regard. The farm workers have to recognize the behavioural changes and health problems in pigs and this often involves psychological interactions. While moving, restraining and subjecting the animals to the management and health procedures, tactile and auditory interactions are involved. It is in such situations that stockman-animal interactions have considerable potential to influence animal welfare and productivity. Often, the job related attributes of farm workers determine the effectiveness of these

interactions. There is no replacement for good management and more importantly, good stockmanship to get maximum returns (Farrell, 1982).

The research by Hemsworth *et al.* (1981a; 1981b; 1989) verified empirically the role of the stockperson's attitude and behaviour on the behaviour, productivity and welfare of commercial pigs. However, Indian studies on the influence of farm workers on farm animal welfare and production are scarce. It is a well-established fact that the animal welfare essentially depends upon meeting the psychological requirements and behavioural needs in addition to physiological ones (Seamer, 1998). Satisfying the conditions conducive to the welfare of animals is essential for improving farm animal production. The farm workers, who actually involve with the farm animals and take care of them on a daily basis, are mainly responsible to meet the requirements of animals. The organizational behaviour factors or the job related attributes of farm workers such as their attitude towards the job, knowledge of pig keeping, skill in pig keeping, job satisfaction and job performance are the major underlying factors of the stockman-animal relationship in the organized pig farms. These qualities of the farm workers influence the efficiency of many routine husbandry practices that rely on a close approach and inspection of the animals. The personality disposition, behaviour and actions of farm workers can have significant impact on the welfare and performance of the animals. Aversive handling of animals by the farm workers either due to ignorance or a lack of favourable attitude towards his/her job can be a major cause of stress to the animal, especially in intensive system. This in turn can affect the production performance of the animals. Considering the important role the farm workers play in organized animal systems, it is essential that more research attempts to understand the influence of various aspects of stewardship on the production performance of animals be made.

Is there any relationship between the organisational behaviour of farm workers and production performance of pigs in the organized pig farms of Kerala? Where do the farm workers stand with regard to the job related attributes as attitude towards the job, knowledge of pig keeping, skill in pig keeping, job

satisfaction and job performance? Is there any relationship between these job related attributes? What are the aspects of the job with which they are satisfied and with what aspects they are dissatisfied?

The present study has attempted to answer these questions. The study, on further analysis, may also reveal the specific knowledge, skill and attitude areas in which the farm workers are lacking. These, together with the findings of the study may provide the basis for developing training programmes and motivational packages for the farm workers. An improved understanding of the human-animal and human-human relationships in the organized farms may help the scientists, extension functionaries, development workers and policy makers in evolving appropriate strategies to fine-tune these relationships for the effective functioning and enhanced output of the farms. The investments in this regard can place the organized swine farm sector on the fast track of prosperity.

OBJECTIVE OF THE STUDY

1. To study the relationship between the organizational behaviour factors of farm workers in the organized swine farms of Kerala and the production performance parameters of pigs.

LIMITATIONS OF THE STUDY

1. Any attempt to generalize the findings of the present study should take into account the fact that the study was conducted only in the organized pig farms of Kerala.
2. Only arbitrary knowledge and skill tests could be developed because of limited number of respondents.
3. The research worker, obviously, did not have any means to assess the genuineness and honesty of the responses.
4. An elaborate skill test, based on the observation of tasks done or assessment through practical exercises could not be performed because of practical difficulties. Instead, the skills were measured on the basis of self-rating by the farm workers.

Review of Literature

2. REVIEW OF LITERATURE

The review of some of the relevant studies is presented under the following subheads.

- 2.1. Concepts of organisational behaviour factors
- 2.2. Relationship between the organisational behaviour factors
- 2.3. Relationship between the organisational behaviour factors of farm workers and the production performance parameters of farm animals

2.1 CONCEPTS OF ORGANIZATIONAL BEHAVIOUR FACTORS

2.1.1 Attitude

Allport (1935) defined attitude as a mental state of readiness, organized through experience, exerting a directive and dynamic influence upon the individual's response to all objects and situations with which it is related.

Murphy *et al.* (1937) defined attitude as primarily a way of being set toward or against certain things.

Thurstone (1946) referred attitude as the degree of positive or negative affect associated with some psychological object.

According to Krech and Krutchfield (1948), attitudes are functions of perception.

Newcomb (1950) speaks of attitude as a state of readiness for motive arousal and an individual's attitude towards something is his predisposition to perform, perceive, think and feel in relation to it.

Remmers *et al.* (1967) defined attitude informally as the feeling for or against something.

Mehrabian (1973) defined attitude as the degree of liking, evaluation and/or preference of one person for another.

An attitude is a predisposition towards any person, idea or object that contains cognitive, affective and behavioural components (Milbrath, 1977).

Pareek *et al.* (1981) defined attitude as a more or less stable set or predisposition of opinion, interest or purpose involving expectancy of a certain kind of experience and a readiness with an appropriate response.

Dahama and Bhatnagar (1985) defined attitude as learned responses, which are always formed in relation to objects, ideas or persons. Attitudes may reflect one's central values; show one's consistency in ways of reacting or ways of gratifying needs.

According to Harrell (1985), "the word attitude means a set of actions with an emotional overtone". In other words, it is liking or disliking. A like or a dislike prepares us to act favourably or unfavourably, even when we do not realize that we like or dislike the thing in question.

Dwivedi (1988) defined attitude as a predisposition to respond favourably or unfavourably.

Mathiyalagan (1997) conceptualized attitude as a predisposition to behave in a given manner.

According to Ahuja (1999), attitude is a stable, long lasting and learned predisposition to respond to certain things in certain ways. An attitude has three aspects to it: belief, feeling and action.

2.1.2 Knowledge

Bloom *et al.* (1956) defined knowledge as those behaviours and test situations, which emphasized the remembering either by recognition or recall of ideas, materials or phenomena.

English and English (1958) defined knowledge as “ body of understood information possessed by an individual or by a culture”.

According to Pillai (1978), knowledge is an important component of behaviour and as such plays an important role in the behaviour of an individual.

Mathiyalagan (1997) referred to knowledge as the intimate acquaintance with facts. It is the information one has acquired and can be used in various situations.

2.1.3 Skill

Kalra (1997) defined skill as the “practical ability to do”. Skill can be improved with practice.

Skill is an ability in action (Mathiyalagan, 1997).

According to Ahuja (1999), skill is a learned response, often as the result of specific training, which affords some one the ability to perform a particular task and achieve a particular goal.

2.1.4 Job Satisfaction

According to Guion (1958), job satisfaction is the extent to which the individual perceives that satisfaction as stemming from his total job situation.

Vroom (1964) referred job satisfaction to affective orientations on the part of individuals toward work roles, which they are presently occupying. Positive attitudes towards the job are equivalent to job satisfaction and negative attitudes towards the job are equivalent to job dissatisfaction.

Job satisfaction has been defined by Gilmer (1966) as the result of various attitudes the person holds towards the job, towards related factors and towards life in general.

Regarding the components of job satisfaction, McGregor’s (1967) study indicated that job satisfaction depended upon the aesthetics of the work place,

opportunities to face job challenge, power over one's environment and excitement of risk taking.

According to Davis (1971), "job satisfaction is the favourableness or unfavourableness with which employees view their work".

Porter and Steers (1973) conceptualized job satisfaction as the sum total of an individual's met expectations on the job.

Locke (1976) defined job satisfaction as "the pleasurable emotional state resulting from the perception of one's job as fulfilling or allowing the fulfillment of one's important job values, provided these values are compatible with one's job".

Sinha *et al.* (1976) defined job satisfaction as the mental state of an individual in an organization when he feels satisfied in performing job of his position.

Anastasi (1979) explained job satisfaction essentially as the degree of correspondence between each worker's needs and their need fulfilling characteristics of the job. Job variables may interact with worker characteristics in their relation to job satisfaction.

Micheal (1990) defined job satisfaction as the satisfaction one gets from his work or from performing it.

Waris *et al.* (1990) operationalised job satisfaction as the verbal expression of an incumbent's evaluation of his job on a continuum of like - dislike or satisfied – dissatisfied.

According to Ahuja (1999), job satisfaction is the extent to which a worker is content with the rewards he or she gets out of his or her job, particularly in terms of intrinsic motivation.

2.1.5 Job Performance

According to Getzels (1958), the job performance of an individual is a function of both role and personality.

According to Vroom (1964), performance of a person is to be understood in terms of his abilities and their relevance to the task to be performed, more briefly, it can be represented by the proposition that the level of performance of a worker on a task is a direct function of his ability to perform that task.

Davis (1971) states “How an individual actually perform in a given position as distinct from how he is supposed to perform is called his role”

Kalavathy (1989) defined job performance as “accomplishment in the course of discharge of the duties in terms of job content and various personal and job related factors”.

Waris *et al.* (1990) operationalized job performance as the verbal expression of an incumbent’s evaluation of his job in which he rates his job on a continuum of “like-dislike” or “satisfied-dissatisfied”.

Ahuja (1999) defined job performance as the way a job or task is done by an individual, a group or an organization.

2.1.6 Absenteeism

Ahuja (1999) meant absenteeism as the failure of workers to appear on the job when they are scheduled to work, the absence from normal duty of an employee during normal working hours, whether voluntary or involuntary.

2.2 RELATIONSHIP BETWEEN THE ORGANISATIONAL BEHAVIOUR FACTORS

Vroom (1964) found that a combination of influences from the application of the entire education/training/motivation package contributed to enhanced performance of workers in the livestock enterprises. According to him, the feeling of achievement in reducing mortality and improving breeding performance, in turn, was likely to provide further motivation and job satisfaction.

Lloyd (1975) in highlighting the lack of training and of trained staff in the poultry industry, contended that training to improve understanding of the birds' needs and associated skills would not only enhance animal care but would also have positive influences on job satisfaction, work performance and employment stability thus reducing staff turn-over and helping to keep a good working team together.

Seabrook (1994) suggested that three drives analogous to Freud's id, ego and superego influence stockperson attitudes and behaviour. He also provided some illuminating reports of unsolicited stockperson attitude statements, which appear to be directed towards behaviour. For example, "everyday it is the same old routine: feed, move pigs. When they won't go where you want them to, it is so easy to lash out with the foot, they are so stubborn". Such statements were consistent with stockpersons behaving in a way determined by their attitude.

Coleman *et al.* (1998) conducted a study on 87 stockpersons from a large commercial piggery in two cohorts of 44 and 43 stockpersons each. The aim of the study was to determine the interrelationships between stockperson attitude, stockperson behaviour and other variables including job-related variables as job satisfaction and job knowledge and empathy. Results showed that attitude variables were the most consistent predictors of behaviour and that job-related variables correlated with attitudes but did not contribute greatly to predicting behaviour. There was some limited evidence to suggest that empathy might contribute to predicting job-related variables. These results provided a basis for developing training programmes for stockpersons that targeted specific attitude-behaviour areas in which the individual stockperson required improvement.

Hemsworth *et al.* (2000) in their study on relationships between human-animal interactions and productivity of 66 commercial dairy farms of Australia found that positive attitude by stockpeople toward the behaviour of dairy cows was negatively correlated with the number of forceful, negative tactile interactions used by the stockpeople in handling cows.

English *et al.* (2002) opined that some of the negative consequences of job dissatisfaction were faulty attitude to the job and the pig, ignorance of pig disease problems, poorer time keeping and increased absenteeism.

Hemsworth (2003) in his study on human-animal interaction in livestock production found that an important antecedent of stockperson behaviour was the attitude of the stockperson towards interacting with the farm animals

2.3 RELATIONSHIP BETWEEN THE ORGANISATIONAL BEHAVIOUR FACTORS OF FARM WORKERS AND THE PRODUCTION PERFORMANCE PARAMETERS OF FARM ANIMALS

Backstrom (1973) reported a high significant correlation between good hygiene and larger herd size in swine farms.

Simensen and Karlberg (1980) suggested that the person taking care of the piglets in the farrowing quarters had some influence on the preweaning performances of piglets.

Hemsworth *et al.* (1981a) in their study on the effect of handling on growth in pigs found that aversive handling of piglets lowered growth rate due to stress developed in handling.

Hemsworth *et al.* (1981b) studied twelve commercial one-man farms for the behaviour response of sows to the presence of human beings and its relation to productivity. A significant correlation existed between the sow's behaviour and its production performance. The results of this study strongly suggested that the reproductive performance of the farm was associated with the relationship developed between the stockman and his breeding stock. The quality and quantity of animal handling by the stockman was suggested as the most obvious factor that influenced the behavioural response of sows. The aspects of stockmanship such as technical skill and knowledge and work attitude and effort, which might be associated with handling skills, might have also produced the differences in reproductive performances between farms.

Muirhead (1983) did report increased performance in pig herds following on-farm training to stockmen but the claimed improvements were not quantified.

Seabrook (1983) defined stockmanship as knowing the behaviour pattern of animals and groups of animals within one's charge and having the ability to recognize the small changes in the behaviour of any one animal or of all the animals collectively.

Seabrook (1984) presented the results of the major survey of a group of one-man dairy units under the same management regime. The analysis showed that there was a variation in performance of identical units and that there were measurable changes in performance on the units with the change of stockperson. The herds were also investigated by a longitudinal participant observation study which together with the data provided a conclusion to support the view that the stockperson's empathetic skills influence the yield of dairy cows. The change in yield with the change of stockperson had been showed to be upto 20 per cent. The highest yielding cowmen appeared to have traits as introversion and confidence.

Wilson *et al.* (1986) in their study on the productivity and its component interrelationships in Canadian swine herds inferred that the herdsman's ability to recognize and deal with health problems in a prompt and effective manner was a major factor in reducing the mortality in all production areas.

Hemsworth and Barnett (1987) have provided insight into a number of observations on commercial units, together with the results of a number of experiments. They concluded that there was a substantial range in the quality of human-animal interaction and at the lower end of the range where the pigs were fearful of humans, the productivity and the welfare of the animals were affected.

Hemsworth *et al.* (1987) in their studies gave heifers extra handling at the time of their first calving. The efficiency of milking process was improved. The time taken to approach the experimenter was reduced by the extra handling, suggesting a reduced level of fearfulness.

English *et al.* (1988) suggested a comprehensive definition of stockmanship. Their approach was to think of good stockmanship as being a well moulded combination of a sound basic knowledge of the animals and their requirements, a basic attachment for and patience with the stock, the ability and willingness to communicate and develop a good relationship with the stock (empathy), careful and effective animal handling ability, ability to recognize all individual animals and to remember their particular eccentricities, an understanding of normal behavioural characteristics of the stock and a keen sensitivity for recognizing the slightest departure from normal behaviour of individual animals (perceptual skills), an ability to organize the working time well, having a keen appreciation of priorities with a ready willingness to be side-tracked from routine duties as pressing needs arise so as to attend to the individual animals which are in most need of attention.

Hemsworth *et al.* (1989) observed interactions between the stockperson and the pigs on farms of quiet diverse management styles. The number of aversive interactions was positively correlated with increased avoidance of the stockperson by the pigs, and was negatively correlated with many measures of reproductive performance, accounting for 40 per cent of the variance between farms in litter size, and 28 per cent of the variance in total pigs weaned. They also looked for correlations between stockpersons' attitudes and the productivity of pigs. The study focused on stockpersons' attitudes to pigs, asking for example, if the stockperson found the pig easy to handle, enjoyed petting pigs, gave the pigs individual names etc. The way that the stockpersons answered these questions was related to many measures of reproduction of the pigs. For example, multiple regression showed that 46% of the variance between farms in farrowing rate was accounted for by how difficult the stockperson felt that pigs were to handle. Enjoying petting pigs was positively correlated with the total number of pigs born alive and the number of litters per sow per year. These different attitudes to pigs tended to be associated with different ways of handling the animals: stockpersons who felt pigs were difficult to move tended to use more aversive handling. Such results confirm the crucial role of human behaviour and

attitudes in determining the level of fear of humans showed by farm animals and its consequences for productivity and welfare.

Lyons (1989) in his experiment found no differences in overall milk yield of goats associated with increased fear of people, although more milk was obtained as residual milk, suggesting more failed milk ejections.

According to Dawkins (1990), animal welfare seems to consist in the absence of suffering. Animal welfare involves the subjective feelings of animals. The growing concern for animals in laboratories, farms and zoos is not just concern about their physical health, important though that is. Nor is it just to ensure that animals function properly, like well-maintained machines, desirable though that may be. Rather, it is a concern that some of the ways in which humans treat other animals cause mental suffering and that these animals may experience “pain”, “boredom”, “frustration”, “hunger” and other unpleasant states perhaps not totally unlike those we experience.

English (1991) proposed that a desirable characteristic of a good stockperson is empathy, which obviously is reflected in the stockperson’s behaviour towards animals. If empathy is to be of use in understanding what makes a good stockperson, that is necessary to be able to assess it independent of the stockperson’s behaviour. Only then can the relevance of empathy, as distinct from attitudes or other personality variables, be assessed with respect to determining the characteristics of a good stockperson. People may respond sensitively to apparent distress in an animal without necessarily feeling distressed themselves. If this occurred, it could indicate good training perhaps or appropriate attitudes, but would not be an empathic response.

Seabrook (1991a) in his study on the influence of the stockperson on the behaviour of pigs reported that the “implied’ non-aggression level” was the personality trait of the stockperson most significantly associated with the behaviour of pigs. This characteristic was negatively correlated with mortality and positively with the number of piglets reared per sow.

Seabrook (1991b) on reviewing various research findings regarding the effect of stockperson on the performance of farm animals concluded that the behaviour of the stockperson can be a potential stressor with consequences for productivity and welfare. By adopting the correct empathetic behaviour, the stockperson can have a crucial role in creating an environment for improved animal welfare.

Grusenmeyer (1992) established on the basis of experience in large dairy herds in the USA that good stockpeople need leadership and not management, and further asserted that such good employees should not be over managed and under-led.

Seabrook and Bartle (1992) from their experiments found that the manner in which animals were handled by people had a major impact on both production and welfare, pigs handled aversively showed an aversion to people and had lower growth and pregnancy rates, slower reproductive development and reduced production.

Albright (1993) in his study found that the relationship between dairy cattle and caretaker was important. Cows that were less fearful and more friendly to people produced more milk.

Barentt *et al.* (1994) in their study on commercial laying hens found that additional gentle handling of poultry had increased egg production.

English and McPherson (1994) suggested that the quality labour available in animal production enterprise has a major influence on animal performance, welfare and efficiency of the business. High quality stockmanship can be achieved only by the acquisition of extensive knowledge on the animals' requirements, development of skills in the provision of such requirements and through appropriate motivation to achieve further progressive improvements in the many essential components of high quality stockmanship.

Hemsworth *et al.* (1994a) used a comprehensive training scheme designed to change the attitude, beliefs and behaviour of the individual stockman

responsible for the breeding management of sows on each of 35 farms in Australia. The on-farm training proved to be effective in changing the attitude of these stockmen towards using a much lower percentage of negative behaviour and a much higher proportion of positive behaviour when moving and handling sows for detection of estrus and mating. This training scheme resulted in an improvement in pigs born per sow per year of seven per cent on average, on these farms. The sows also became easier to handle which had a positive influence on job satisfaction and job turn-over rate declined.

Hemsworth *et al.* (1994b) found that, on farms where poultry kept a large distance between themselves and people; feed conversion efficiency was lower, although there were no differences in egg production.

Hemsworth *et al.* (1994c) and Hemsworth *et al.* (1996) in their studies found that when the farm animals were repeatedly handled by people in a manner that they found aversive, through a process of classical conditioning, the animals learned to associate the handling with people and hence developed a learned fear of people.

Seabrook (1994) in his study, found strong negative correlations across herds of dairy cows between fearfulness and milk yield. In animals handled aversively, the milk yield was substantially lower when compared to the animals treated gently.

Hemsworth *et al.* (1995) in their study found strong negative correlations across herds of dairy cows in Australia, between fear of humans and milk yield.

Duran (1996) in his study of a unit housing over five thousand crossbred pigs from 35kg body weight to slaughter found that mortality was high due to lack of basic stockmanship, inability to detect injured and diseased pigs, insufficient knowledge about the disease involved and no training in treatment and care of casualties. On-farm demonstrations with specimens and cases improved productivity and also well-being of both the pigs and stockmen considerably.

In farms of any specific sector, under similar conditions of climate and other influential variables, between farm variation in livestock performance is due to different genotypes, food resources and building facilities but it is likely that a very large part of this variation is caused by the quality of the human resources – the management and the stock people (English, 1996)

Ravel *et al.* (1996a) in their cross-sectional study on selected independent and integrated swine farms in Quebec, found that the personality traits of stockperson had a much greater influence on preweaning performances than management among the integrated farms, whereas management was more important than the stockperson among the independent farms. Self-discipline was the only personality trait constantly associated with preweaning performances in both types of farms. For stockpersons in independent farms, scoring high on insecurity and low on sensitivity appeared to be favourable personality traits in relation to performances. In integrated farms, high performances were positively associated with warmth and emotional stability of the stockpersons. Whereas poor performances were associated with tension, boldness and suspiciousness.

Ravel *et al.* (1996b) studied the psycho demographic profile of stockpeople working on independent and integrated swine breeding farms in Quebec. They found that the stockpersons of both the independent and integrated farms scored low on personality traits as impulsivity, sensitivity and general anxiety whereas high on emotional stability, confirmity self-discipline and introversion. Stockpersons of independent farms scored low on dominance, suspiciousness, insecurity and tension whereas those of integrated farms scored low on warmth.

Rushen (1996) on reviewing the various studies on using aversion learning techniques to assess the mental state, suffering and welfare of farm animals reported that aversion learning techniques were more easily interpreted in terms of animal suffering and were more able to discriminate between handling treatments. They could sometimes be used to predict physiological responses to handling.

Sandoe (1996) defined welfare as experienced preference-satisfaction. This general notion of welfare covers both animals and humans. It is, however, also argued that there are aspects of human welfare which are uniquely human and that there may be aspects of animal welfare which are uniquely animal.

A study conducted by Munksgaard *et al.* (1997) on 12 Danish Friesian cows examined whether the dairy cows could distinguish people based on the treatment received, whether cows used colour as a cue to make this discrimination, and whether cows generalized their discrimination to other locations. They found that the cows discriminated between gentle and aversive handlers equally well in their home stalls as in the treatment stall, showing that the cows were able to recognize handlers in location other than where the handling occurred. The cows were capable of distinguishing people. The colour of the clothes worn was a cue, although recognition of people was not based solely on the colour of clothes worn.

Seamer (1998) opined that humans should act as stewards for animal welfare. Stewardship imposes upon man a responsibility for the care and welfare of animals. Animal welfare is a state of animal well-being, which flourishes when physiological and psychological requirements are met continuously and adverse factors are controlled or absent.

English *et al.* (1999) in their study to evaluate the effects of training methodologies, motivational influences and staff and enterprise development initiatives for livestock industry workers in Scotland, Greece, Spain, Italy and Norway on livestock performance and indices of animal welfare, found improved sow reproductive performance and reduced mortality after the training/educational/certification/motivational initiatives had been applied. The improvements in performance were achieved entirely by the additional care of new born piglets, improved care of smaller, less competitive pigs, earlier detection of disease and other problems combined with prompt application of remedial treatment and better A.I / service management through having a better understanding of the pig's needs and providing for these needs through enhanced

stockmanship care. The enhancement of the knowledge and understanding of the stockpeople, the improved basis of their skills, their enhanced motivation and team working or some combination of these and other associated factors, appeared to be effective in achieving substantial improvements in important performance parameters.

Rushen *et al.* (1999a) in their experimental study on fourteen Holstein cows of Westphalia, Illinois, found that the presence of an aversive handler during milking reduced milk yield because of increased residual milk and led to elevated heart rates.

Rushen *et al.* (1999b) after reviewing the various studies on the effect of factors as animals' fear of humans type handling, the attitude and personality of stockperson on the productivity of animals concluded that aversive handling resulted in significant fear which caused serious losses in productivity, increased handling problems and resultant injuries to both animals and handlers and diminished animal welfare. Regular gentle handling, particularly from a young age, could help overcome the negative effects of those aversive procedures that were a necessary part of animal husbandry, as well as reducing fearfulness.

Breuer *et al.* (2000) in their study on the commercial dairy cows found that the attitudes of stockpeople towards interacting with their animals were correlated with the behaviour of the stockpeople, which in turn, was found to be correlated with fear of humans by the farm animals.

Coleman *et al.* (2000) in their research demonstrated that a training program to modify the attitude and behaviour of stock people at a large commercial pig farm resulted in improvements in these variables and also led to a reduction of fear in pigs and an improvement in reproductive performance.

Hemsworth *et al.* (2000) in their study on relationships between human-animal interactions and productivity of 66 commercial dairy farms of Australia found that positive attitude by stockpeople toward the behaviour of dairy cows was negatively correlated with the number of forceful, negative tactile

interactions used by the stockpeople in handling cows. And also the use of negative interactions as slaps, pushes, hits and tail twists by stockpeople was significantly and negatively correlated with the milk yield of dairy cows.

English *et al.* (2002) proposed the Mill Wheel concept for improving the stockmanship. The components of Mill Wheel were select better people, education, training, good working conditions, hygiene, sound system, man management motivation, team spirit, job satisfaction, good attitude, dedication to work, enjoy job, remain in job, experience and train experienced workers as trainers. According to him the efficient operation of the Mill Wheel would result in increased interest in and demand for pig industry jobs; selection of potentially good stockpeople; good induction procedures for new staff; regular and progressive training; effective people management and motivation; team spirit and team work; job satisfaction; low staff turn-over and the training of trainers.

Raussi (2003) in his study on human-cattle interactions in traditional European stall barns found that the fear of cattle could be avoided with positive human contact. He opined that absolutely reliable automatic instruments for health detection of cows do not exist until now and thus, the stockperson has to identify individual cows from the group.

Materials and Methods

3. MATERIALS AND METHODS

The methodology followed in this study is described under the following headings.

- 3.1 Locale and respondents of the study
- 3.2 Data collection
- 3.3 Variables of the study
- 3.4 Operationalisation and measurement of variables
- 3.5 Statistical methods used

3.1 LOCALE AND RESPONDENTS OF THE STUDY

All the pig farms following standard management systems operating under the Animal Husbandry Department (AHD) of Kerala, Kerala Livestock Development Board (KLDB) and Kerala Agricultural University (KAU) were selected as the locale of the study. Thus seven pig farms of AHD of Kerala and the farms of KLDB and KAU were studied.

The units studied were,

A. Animal Husbandry Department, Kerala

1. Pig Breeding Unit, Angamaly
2. Pig Breeding Unit, Thalayolapparambu
3. Pig Breeding Unit, Kolani, Thodupuzha
4. Pig Breeding Unit, Parassala
5. Pig Breeding Unit, District Livestock Farm, Kodappanakkunnu

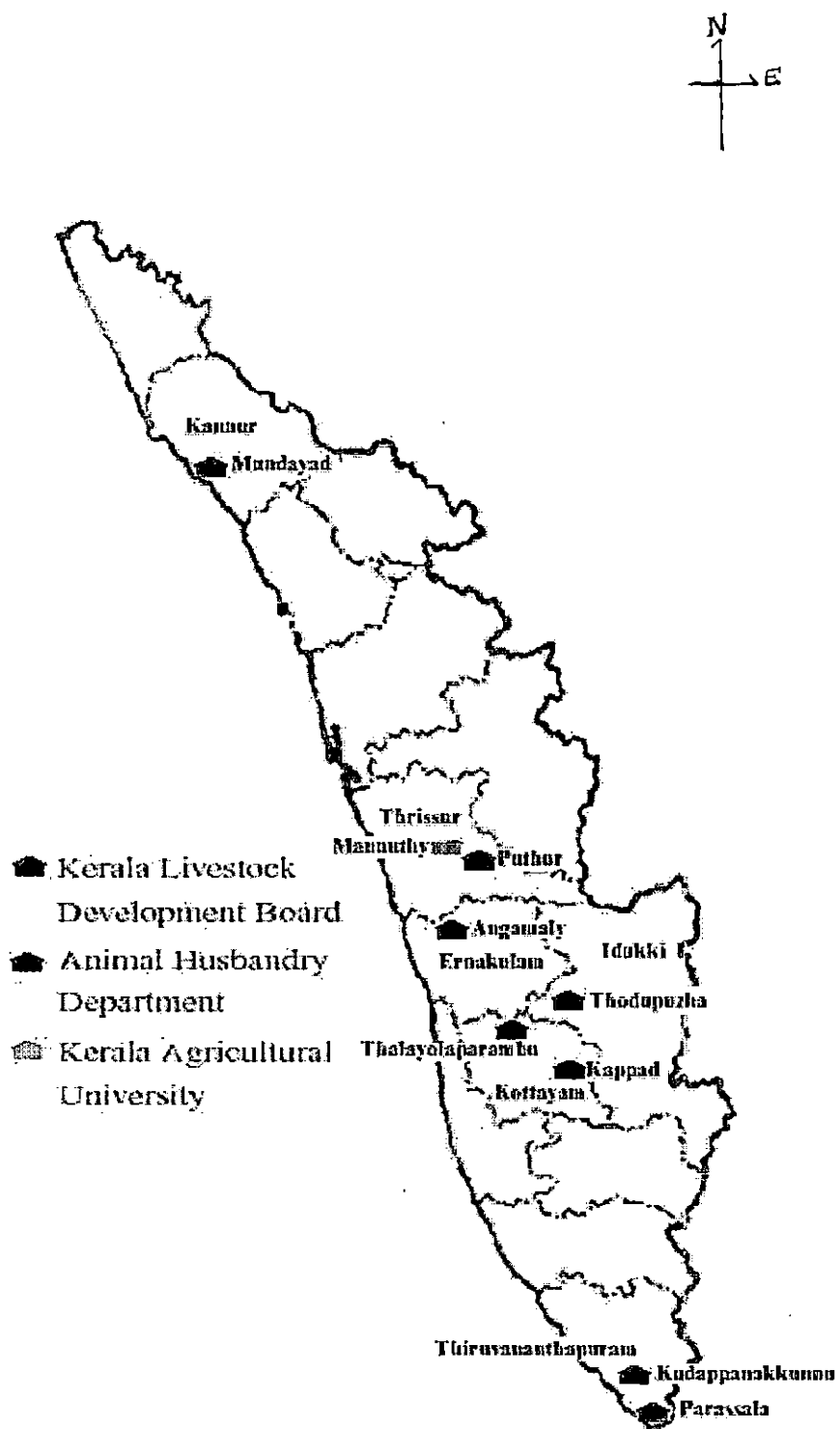


Fig. 1 Kerala map showing the organised pig farms selected for the study

6. Pig Breeding Unit, Kappad
 7. Pig Breeding Unit, Mundayad
- B. Pig Breeding Centre, Puthur, Kerala Livestock Development Board
- C. Centre for pig production and research, Mannuthy, Kerala Agricultural University

All the farm workers who were actually involved with the animals on a daily basis, with a working experience of at least six months were the respondents of the study. Thus the respondents comprised a total of 61 farm workers in the nine organized pig farms.

3.2 DATA COLLECTION

3.2.1 Organisational Behaviour Factors of Farm Workers

The data regarding the organizational behaviour factors except job performance and absenteeism were collected through single interview sessions with the farm workers using structured interview schedule. The job performance and absenteeism were assessed through supervisory rating.

3.2.2 Production Performance Parameters of Pigs

The data regarding the production performance parameters of pigs were collected from the farm records for a period of six months from May 2002 to October 2002.

3.3 VARIABLES OF THE STUDY

Based on the objectives of the study, review of literature and discussion with subject matter specialists, the following variables were selected for the study.

I. Personal profile

1. Age
2. Sex
3. Marital status
4. Type of family
5. Number of children
6. Mode of transportation to work place
7. Distance to work place from residence
8. Literacy
9. Educational qualification
10. Working experience
11. Number of trainings attended
12. Source of family income
13. Monthly family income
14. Income from monthly wages

II. Organisational behaviour factors (Independent variables)

1. Attitude towards the job
2. Knowledge of pig keeping *
3. Skill in pig keeping **
4. Job satisfaction
5. Job performance
6. Absenteeism

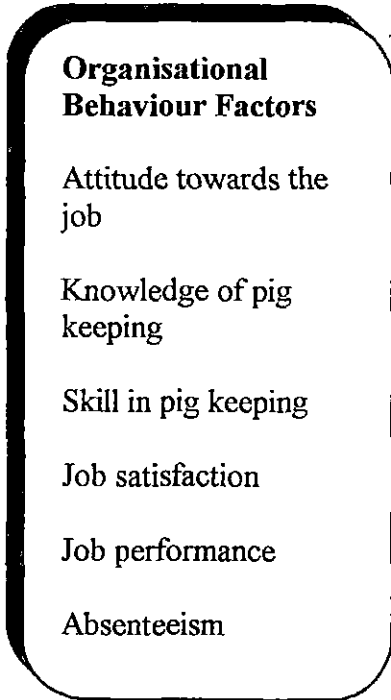
III. Production performance parameters of pigs (Dependent variables)

1. Age at first mating
2. Conception rate
3. Farrowing percentage

* Knowledge of care and management of pigs

** Skill in care and management of pigs

INDEPENDENT VARIABLES



DEPENDENT VARIABLES

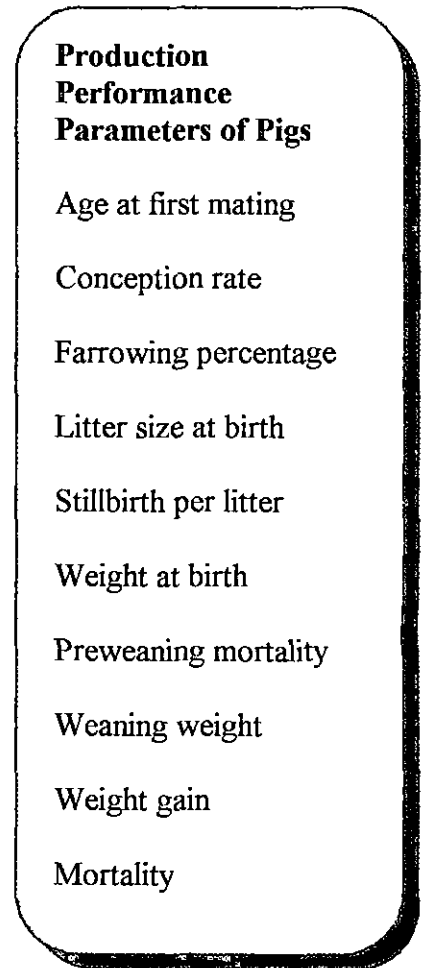


Fig. 2. Conceptual model of the study

4. Litter size at birth
5. Still birth per litter
6. Weight at birth
7. Preweaning mortality
8. Weaning weight
9. Weight gain
10. Mortality

3.4 OPERATIONALISATION AND MEASUREMENT OF VARIABLES

3.4.1 Personal Profile

3.4.1.1 Age

Age of the respondent was operationally defined as the number of years of chronological age completed by the respondent at the time of study. Based on the age, the respondents were arbitrarily categorized as follows.

Category

Young (Below 35 years)

Middle aged (35-45 years)

Old (Above 45 years)

3.4.1.2 Sex

It indicated whether the respondents were male or female and accordingly they were categorized as follows.

Category

Male

Female

3.4.1.3 Marital Status

It meant whether the respondents were married or unmarried at the time of study. Based on this, two categories were formed.

Category

Married

Unmarried

3.4.1.4 Type of Family

It meant whether the respondents belonged to nuclear family or joint family. Based on this, two categories were drawn.

Category

Nuclear family

Joint family

3.4.1.5 Number of Children

It referred to the number of children the respondents had at the time of data collection. Based on this, five arbitrary categories were formed.

Category

No children

One child

Two children

Three children

More than three children

3.4.1.6 Mode of Transportation to Work Place

This was operationalized as the mode of transport used by the farm workers to reach the work place. Based on this, four categories were drawn.

Category

- Bus
- Cycle
- On foot
- Others

3.4.1.7 Distance to Work Place from Residence

It indicated the distance travelled by the respondents from their residence to the work place. Based on this, three arbitrary categories were formed.

Category

- Less than 5 km
- 5 – 10 km
- More than 10 km

3.4.1.8 Literacy

It meant whether the respondents were able to read and write. Based on this, they were categorized as follows.

Category

- Literate
- Illiterate

3.4.1.9 Educational Qualification

It was operationally defined as the formal education the respondents had acquired in terms of primary school education, secondary school education, high school education, collegiate and others. Based on this, six categories were drawn.

Category

- No formal education
- Primary school educated (1-4)
- Secondary school educated (5-7)
- High school educated (8-10)
- Collegiate
- Collegiate with additional diploma

3.4.1.10 Working Experience

It referred to the number of years of service completed by the respondents in the pig farms, at the time of the study. The respondents were arbitrarily classified into three categories.

Category

- Below 10 years
- 10 – 20 years
- Above 20 years

3.4.1.11 Number of Trainings Attended

It meant the number of trainings undergone by the respondents in pig farming. Accordingly, they were categorized as follows.

Category

No training attended

Attended one training

Attended more than one training

3.4.1.12 Source of Family Income

It referred to the source from which the respondent's family obtained income. Accordingly, two arbitrary categories were formed.

Category

Monthly wages only

Monthly wages and other sources

3.4.1.13 Monthly Family Income

It meant the total monthly income of the family of the respondent. Based on this, three categories were formed.

Category

Below Rupees 3000

Rupees 3000 – 6000

Above Rupees 6000

3.4.1.14 Income from Monthly Wages

This was operationalized as the amount of money the respondents received from monthly wages. Based on the income from monthly wages, the respondents were arbitrarily put under three categories.

Category

Below Rupees 2000

Rupees 2000 – 4000

Above Rupees 4000

3.4.2 Organisational Behaviour Factors

It was operationally defined as the attitude towards the job, knowledge of pig keeping, skill in pig keeping, job satisfaction, job performance and absenteeism of farm workers in the organized pig farms.

3.4.2.1 Attitude Towards the Job

In the present study, attitude towards the job meant how the farm workers felt about their job.

The farm workers' attitude towards the job was measured through the job attitude questionnaire developed by Brayfield and Rothe (1951) using Likert scale procedure. The questionnaire consisted of 18 statements out of which nine were positive and nine were negative, rated on a five point continuum viz. strongly agree, agree, undecided, disagree and strongly disagree with scores 5, 4, 3, 2 and 1 respectively for positive statements. The reverse order was followed for scoring the negative statements. The scale made it possible for a respondent to score from 18 to 90 points with 54 points being equivalent to a neutral position. The data were collected through single face-to-face interview sessions with the respondents. The farm averages of attitude scores of the respondents were worked out for all the nine farms under study.

Based on the attitude scores, the respondents were arbitrarily classified into three categories.

Category

High [Above (Mean+S.D)]

Medium [(Mean+S.D) to (Mean-S.D)]

Low [Below (Mean-S.D)]

3.4.2.2 Knowledge of Pig Keeping

English and English (1958) defined knowledge as “body of understood information possessed by an individual or by a culture”.

In the present study, knowledge was operationally defined as the body of understood information possessed by the respondents about pig keeping, as assessed through an arbitrary knowledge test.

An arbitrary knowledge test was developed to measure the farm workers’ knowledge of pig keeping. Items for the test were identified after referring to literature and discussing with subject matter specialists. Initially the test consisted of 103 items, which were either open type questions, or in dichotomous format. For the final selection, the items were subjected to relevancy rating by a panel of 10 judges comprising of four subject matter specialists in the College of Veterinary and Animal Sciences, Mannuthy; three experts from the Kerala Livestock and Development Board and three Veterinary Surgeons working in the pig farms of Animal Husbandry Department of Kerala.

The judges were asked to rate the relevancy of the items on a four point continuum *viz.* very relevant, relevant, somewhat relevant and not relevant with scores 4, 3, 2 and 1 respectively. The item scores were calculated. The mean of item scores was calculated using the formula,

$$\text{Mean of the item scores} = \frac{\text{Sum of item scores}}{\text{Number of items}}$$

The items having scores above the mean of the items scores were only selected. Thus the final knowledge test consisted of 43 items. The test was then administered to the respondents. The data were collected in face-to-face single interview sessions with the respondents. The summation of scores for the correct replies over all the items of a particular respondent indicated his/her knowledge score. The farm averages of the knowledge scores were calculated.

Based on the knowledge scores obtained, the respondents were arbitrarily classified into three categories.

Category

High [Above (Mean+S.D)]

Medium [(Mean+S.D) to (Mean-S.D)]

Low [Below (Mean-S.D)]

3.4.2.3 Skill in Pig Keeping

Skill in pig keeping was operationalised as the pig farm workers' ability in performing farm operations, assessed on the basis of self-rating by applying an arbitrary skill test.

An arbitrary skill test was developed to measure the skill of pig farm workers in pig keeping. Items for the test were constructed on the basis of task analysis performed with the help of job chart, observation of tasks done and discussion with experts. The total number of items came to be 51, designed to measure the skill of the respondents on the basis of self-rating of their ability to perform the tasks. For the final selection, the items were subjected to relevancy

rating by a panel of ten judges comprising of four subject matter specialists in the College of Veterinary and Animal Sciences, Mannuthy; three experts from KLDB and three Veterinary Surgeons working in the pig farms of AHD.

The judges were asked to rate the relevancy of the items on a four point continuum *viz.* very relevant, relevant, somewhat relevant and not relevant with scores 4, 3, 2 and 1 respectively. The scores for the items were calculated. The mean of the items scores was calculated using the formula,

$$\text{Mean of the item scores} = \frac{\text{Sum of item scores}}{\text{Number of items}}$$

The items having scores above the mean of the item scores were only selected. Thus the final skill test consisted of 24 items. The test was then administered to the respondents. The summation of scores for the positive replies (can do or able to do) over all the items of a particular respondent indicated his/her skill score. The farm averages of the skill scores were calculated.

Three arbitrary categories of respondents were drawn based on the scores obtained for skill test.

Category

High [Above (Mean+S.D)]

Medium [(Mean+S.D) to (Mean-S.D)]

Low [Below (Mean-S.D)]

3.4.2.4 Job Satisfaction

Job satisfaction was operationalised as the degree to which the pig farm workers were satisfied with different aspects of the job, measured through a job satisfaction scale.

A scale to measure the job satisfaction developed by Laharia (1978) and modified by Jayachandran (1992) was adopted with modifications to suit the situation. The scale consisted of 14 items on various job aspects, which were rated by the respondents on a five point continuum viz., very much satisfied, satisfied, partially satisfied, dissatisfied and very much dissatisfied with scores 5, 4, 3, 2 and 1 respectively.

The responses were recorded in single interview sessions with the respondents. The minimum and maximum possible scores for the respondents were 14 and 70 respectively. The farm averages of the job satisfaction scores were calculated for all the farms.

The mean score per respondent for all the items was calculated using the formula,

$$\text{Mean score of the respondent} = \frac{\text{Score of the respondent}}{\text{Number of items}}$$

Based on the mean scores obtained, the respondents were arbitrarily classified into three categories.

Category

Satisfied [Above (Mean+S.D)]

Partially satisfied [(Mean+S.D) to (Mean-S.D)]

Dissatisfied [Below (Mean-S.D)]

Also the mean score per item for all the respondents was calculated using the formula,

$$\text{Mean score of the item} = \frac{\text{Score of the item}}{\text{Number of respondents}}$$

Based on the mean scores obtained, the items were arbitrarily put under three categories.

Category

Satisfied [Above (Mean+S.D)]

Partially satisfied [(Mean+S.D) to (Mean-S.D)]

Dissatisfied [Below (Mean-S.D)]

3.4.2.5 *Job Performance*

Job performance was operationalised as the degree of occupational performance of farm workers in terms of possession of certain traits or qualities as rated by their supervisors on a semantic differential continuum.

A semantic differential scale (Osgood *et al.*, 1957) was designed to measure the job performance of pig farm workers as perceived by their supervisors. The scale consisted of ten pairs of bipolar adjectives, descriptive of the concept of job performance of farm workers, which were scored on a seven point continuum. The unfavourable poles were assigned the score '1' and the favourable poles the score '7'. Some pairs of adjectives were reversed at random in order to reduce certain response biases like thoughtlessness and stereotyped reading. The supervisors were asked to rate each pair by placing a tick mark in boxes along a continuum between the two poles. Out of the ten bipolar adjectives pairs, five pairs measured the evaluative factor, three the activity factor and two the potency factor. The scores and the nature of factors were only attached during data entry for analysis purposes.

The job performance score was obtained by summation of the scores of subscales. The minimum and maximum possible scores were 10 and 70 respectively. The farm averages of job performance were calculated.

Based on the job performance scores, the respondents were arbitrarily categorized as follows.

Category

High [Above (Mean+S.D)]

Medium [(Mean+S.D) to (Mean-S.D)]

Low [Below (Mean-S.D)]

3.4.2.6 Absenteeism

Absenteeism was operationalised as the degree to which the farm workers kept away from duty in terms of leave taken, unexcused absence, i.e. keeping away from duty without permission, unavailability in the work area and late coming.

A graphic rating scale was constructed to measure the absenteeism of farm workers as evaluated or rated by their supervisors. The scale consisted of four items, which were descriptive of the absenteeism of farm workers, out of which three were positive and one negative. These were rated on a continuum on which only three points were named *viz.*, always, sometimes and never with scores 5, 3 and 1 respectively for positive statements. The reverse order was followed for scoring negative statements. The respondents were asked to rate the items by putting a 'X' mark anywhere on the continuum. The absenteeism scores were calculated by summation of scores of the items. The minimum and maximum possible scores were '4' and '20' respectively. The farm averages were calculated.

Based on the absenteeism scores obtained, three arbitrary categories of respondents were drawn.

Category

High [Above (Mean+S.D)]

Medium [(Mean+S.D) to (Mean-S.D)]

Low [Below (Mean-S.D)]

The intercorrelations of the organizational behaviour factors *viz.*, attitude towards the job, knowledge of pig keeping, skill in pig keeping, job satisfaction, job performance and absenteeism were worked out based on the scores obtained by the respondents for these factors, using Kendall's tau-b rank order correlation.

3.4.3 Production Performance Parameters of Pigs

The production performance parameters studied were those related to the survival, growth and reproduction of piglets and breeding pigs.

3.4.3.1 Age at First Mating

It meant the age at which the gilts were served/inseminated for the first time.

The data were obtained from farm records and the farm averages were calculated.

3.4.3.2 Conception Rate

The percentage of sows or gilts achieving successful pregnancy of those actually served/inseminated.

The data regarding the number of animals served/inseminated and the number of animals conceived were gathered from the farm records and the conception rate was calculated using the formula,

$$\text{Conception rate} = \frac{\text{Number of animals conceived}}{\text{Number of animals served/inseminated}} \times 100$$

3.4.3.3 Farrowing Percentage

The number of sows actually farrowed as the percentage of sows served/inseminated initially.

The data regarding the number of animals served/inseminated and the number of animals farrowed were collected from the farm records and the farrowing percentage was computed using the formula,

$$\text{Farrowing percentage} = \frac{\text{Number of animals farrowed}}{\text{Number of animals served/inseminated}} \times 100$$

3.4.3.4 Litter Size at Birth

The actual number of offsprings (piglets) born per sow per farrowing.

The data were collected from farm records and the farm averages were calculated.

3.4.3.5 Still Birth per Litter

The number of piglets born dead per litter.

The data were collected from farm records and farm averages were calculated.

3.4.3.6 Body Weight at Birth

Body weight of individual piglets at the time of birth.

The data were collected from farm records and farm averages were calculated.

3.4.3.7 Prewaning Mortality

The number of piglets died before weaning excluding stillbirth.

The preweaning mortality percentage was calculated using the formula,

$$\text{Prewaning mortality percentage} = \frac{\text{Sum of piglets born alive} - \text{Sum of piglets weaned}}{\text{Sum of piglets born alive}} \times 100$$

3.4.3.8 Weaning Weight

The body weight of individual piglets at the time of weaning.

The data were collected from farm records and farm averages were calculated.

Corrected weaning weight was calculated using the formula,

$$\text{Corrected weaning weight at 45 days} = \frac{\text{Weight at weaning} - \text{Weight at birth}}{\text{Age in days at weaning}} \times 45$$

3.4.3.9 Weight Gain

The body weight gain of an individual piglet from birth to weaning.

The body weight gain was computed using the formula,

$$\text{Average body weight gain per litter} = \text{Average weaning weight per litter} - \text{Average birth weight per litter}$$

The data were collected from farm records and the farm averages were calculated.

3.4.3.10 Mortality

The number of piglets died before weaning including stillbirth and preweaning mortality.

The mortality percentage was calculated using the formula,

$$\text{Mortality percentage} = \frac{\text{Sum of piglets born} - \text{Sum of piglets weaned}}{\text{Sum of piglets born}} \times 100$$

3.5 STATISTICAL METHODS USED

Statistical procedures and tools such as frequency analysis, estimation of percentages, mean, standard deviation, Kendall's tau-b rank order correlation and Spearman's Rank order correlation were used in this study.

Results

4. RESULTS

In this chapter the results of the study are presented under the following subheads.

- 4.1 Personal profile of the respondents
- 4.2 Organisational behaviour factors
- 4.3 Intercorrelations of organisational behaviour factors
- 4.4 Correlation between farm workers' attitude towards the job and production performance parameters of pigs.
- 4.5 Correlation between farm workers' knowledge of pig keeping and production performance parameters of pigs.
- 4.6 Correlation between farm workers' skill in pig keeping and production performance parameters of pigs.
- 4.7 Correlation between job satisfaction of farm workers and production performance parameters of pigs.
- 4.8 Correlation between job performance of farm workers and production performance parameters of pigs.
- 4.9 Correlation between absenteeism of farm workers and production performance parameters of pigs.

4.1 PERSONAL PROFILE OF THE RESPONDENTS

4.1.1 Age

Table 1. Distribution of respondents based on age

n=61

Sl. No.	Age	Frequency (f)	Percentage
1.	Young (Below 35)	4	6.56
2.	Middle aged (35-45)	25	40.98
3.	Old (Above 45)	32	52.46
	Total	61	100.00

Table 1 shows that majority of the respondents (52.46 per cent) were of old age, followed by middle age group (40.98 per cent). Only 6.56 per cent of the respondents were young.

4.1.2 Sex

Table 2. Distribution of respondents based on sex

n=61

Sl. No.	Sex	Frequency (f)	Percentage
1.	Male	38	62.30
2.	Female	23	37.70
	Total	61	100.00

A perusal of Table 2 reveals that majority of the respondents (62.30 per cent) were male and the rest (37.70 per cent) were female.

4.1.3 Marital Status

Table 3. Distribution of respondents based on marital status

n=61

Sl. No.	Marital status	Frequency (f)	Percentage
1.	Married	58	95.08
2.	Unmarried	3	4.92
	Total	61	100.00

It is evident from Table 3 that almost all the respondents (95.08 per cent) studied were married and those unmarried were only 4.92 per cent.

4.1.4 Type of Family

Table 4. Distribution of respondents based on type of family

n=61

Sl. No.	Type of family	Frequency (f)	Percentage
1.	Nuclear family	52	85.25
2.	Joint family	9	14.75
	Total	61	100.00

Table 4 shows that majority of the respondents (85.25 per cent) were from nuclear family and 14.75 per cent were from joint family.

4.1.5 Number of Children

Table 5. Distribution of respondents based on number of children

n=58

Sl. No.	Number of children	Frequency (f)	Percentage
1.	No children	3	5.17
2.	One child	5	8.62
3.	Two children	28	48.28
4.	Three children	22	37.93
5.	More than three children	0	0.00
	Total	58	100.00

It can be seen from Table 5 that most of the respondents (48.28 per cent) had two children followed by those with three children (37.93 per cent). 8.62 per cent of the respondents had only one child and 5.17 per cent had no children. None of the respondents had more than three children.

4.1.6 Mode of Transportation to Work Place

Table 6. Distribution of respondents based on mode of transportation to work place

n=61

Sl. No.	Mode of transportation to work place	Frequency (f)	Percentage
1.	Bus	36	59.01
2.	Cycle	4	6.56
3.	On foot	20	32.79
4.	Others	1	1.64
	Total	61	100.00

Data in Table 6 shows that majority of the respondents (59.01 per cent) travelled by bus followed by those who walked to the workplace (32.79 per cent). 6.56 per cent of the respondents used cycle and 1.64 per cent other modes of transportation.

4.1.7 Distance to Work Place from Residence

Table 7. Distribution of respondents based on distance to work place from residence

n=61

Sl. No.	Distance to work place from the residence	Frequency (f)	Percentage
1.	Less than 5 km	42	68.85
2.	5 -10 km	12	19.67
3.	More than10 km	7	11.48
	Total	61	100.00

Majority of the respondents (68.85 per cent) travelled a distance of less than five kilometers from their residence to the work place followed by those who (19.67 per cent) covered a distance of five to ten kilometers. 11.48 per cent travelled a distance of more than ten kilometers (Table 7).

4.1.8 Literacy

Table 8. Distribution of respondents based on literacy

n=61

Sl. No.	Literacy	Frequency (f)	Percentage
1.	Literate	58	95.08
2.	Illiterate	3	4.92
	Total	61	100.00

Table 8 reveals that a vast majority of the respondents (95.08 per cent) were literate and only 4.92 per cent were illiterate.

4.1.9 Educational Qualification

Table 9. Distribution of respondents based on educational qualification

n=61

Sl. No.	Educational qualification	Frequency (f)	Percentage
1.	No formal education	3	4.92
2.	Primary school educated (1-4)	12	19.67
3.	Secondary school educated (5-7)	23	37.70
4.	High school educated (8-10)	21	34.43
5.	Collegiate	1	1.64
6.	Collegiate with additional diploma	1	1.64
	Total	61	100.00

Table 9 depicts that most of the respondents (37.70 per cent) had acquired secondary school education followed by those with high school education (34.43 per cent) and primary school education (19.67 per cent). Among the respondents, 1.64 per cent had collegiate education and an equal percentage with additional diploma, whereas, 4.92 per cent of the respondents received no formal education.

4.1.10 Working Experience

Table 10. Distribution of respondents based on working experience

n=61

Sl. No.	Working experience	Frequency (f)	Percentage
1.	Below 10 years	37	60.65
2.	10-20 years	18	29.51
3.	Above 20 years	6	9.84
	Total	61	100.00

As evident from Table 10, majority of the respondents (60.65 per cent) had a working experience of less than 10 years. Those with 10 to 20 years of experience were 29.51 per cent and 9.84 per cent had worked for more than 20 years.

4.1.11 Number of Trainings Attended

Table 11. Distribution of respondents based on number of trainings attended

n=61

Sl. No.	Training attended	Frequency (f)	Percentage
1.	No training attended	58	95.08
2.	Attended one training	3	4.92
3.	Attended more than one training	0	0.00
	Total	61	100.00

Table 11 depicts that a vast majority of the respondents had not received any training (95.08 per cent). 4.92 per cent had attended one training programme. None of the respondents had attended more than one training.

4.1.12 Source of family income

Table 12. Distribution of respondents based on source of family income

n=61			
Sl. No.	Source of family income	Frequency (f)	Percentage
1.	Income from monthly wages	36	59.02
2.	Income from spouse and children along with monthly wages	24	39.34
3.	Income from business along with monthly wages	1	1.64
	Total	61	100.00

For most of the respondents (59.02 per cent), the only source of family income was their monthly wages, 39.34 per cent got an additional income from the income of spouse and children whereas, 1.64 per cent of the respondents earned income from both the monthly wages and business (Table 12).

4.1.13 Monthly Family Income

Table 13. Distribution of respondents based on monthly family income

n=61			
Sl. No.	Monthly family income (Rupees)	Frequency (f)	Percentage
1.	Less than 3000	6	9.84
2.	3000 – 6000	46	75.41
3.	Above 6000	9	14.75
	Total	61	100.00

It is evident from Table 13 that three-fourth of the respondents (75.41 per cent) had an income of rupees 3000 to 6000 and 14.75 per cent received an income of more than rupees 6000. The monthly family income of 9.84 per cent of the respondents was less than rupees 3000.

4.1.14 Income from Monthly Wages

Table 14. Distribution of respondents based on income from monthly wages

n=61

Sl. No.	Income from monthly wages (Rupees)	Frequency (f)	Percentage
1.	Less than 2000	5	8.20
2.	2000 – 4000	38	62.30
3.	Above 4000	18	29.50
	Total	61	100.00

Table 14 shows that majority of the respondents (62.30 per cent) received an income of rupees 2000 to 4000 from monthly wages. Those who received an income of more than rupees 4000 were 29.50 per cent and 8.20 per cent got an income of less than 2000 rupees.

4.2 ORGANISATIONAL BEHAVIOUR FACTORS

4.2.1 Attitude Towards the Job

Table 15. Distribution of respondents based on attitude towards the job

n=61

Sl. No.	Attitude towards the job	Frequency (f)	Percentage
1.	High [Above 69.52]	8	13.12
2.	Medium [52.42 to 69.52]	43	70.49
3.	Low [Below 52.42]	10	16.39
	Total	61	100.00

Mean=60.97

S.D=8.55

As for the attitude of the respondents towards the job, more than two third of them (70.49 per cent) expressed medium level of favourableness and 16.39 percent, low level of favourableness. Only 13.12 per cent of the respondents had highly favourable attitude (Table 15).

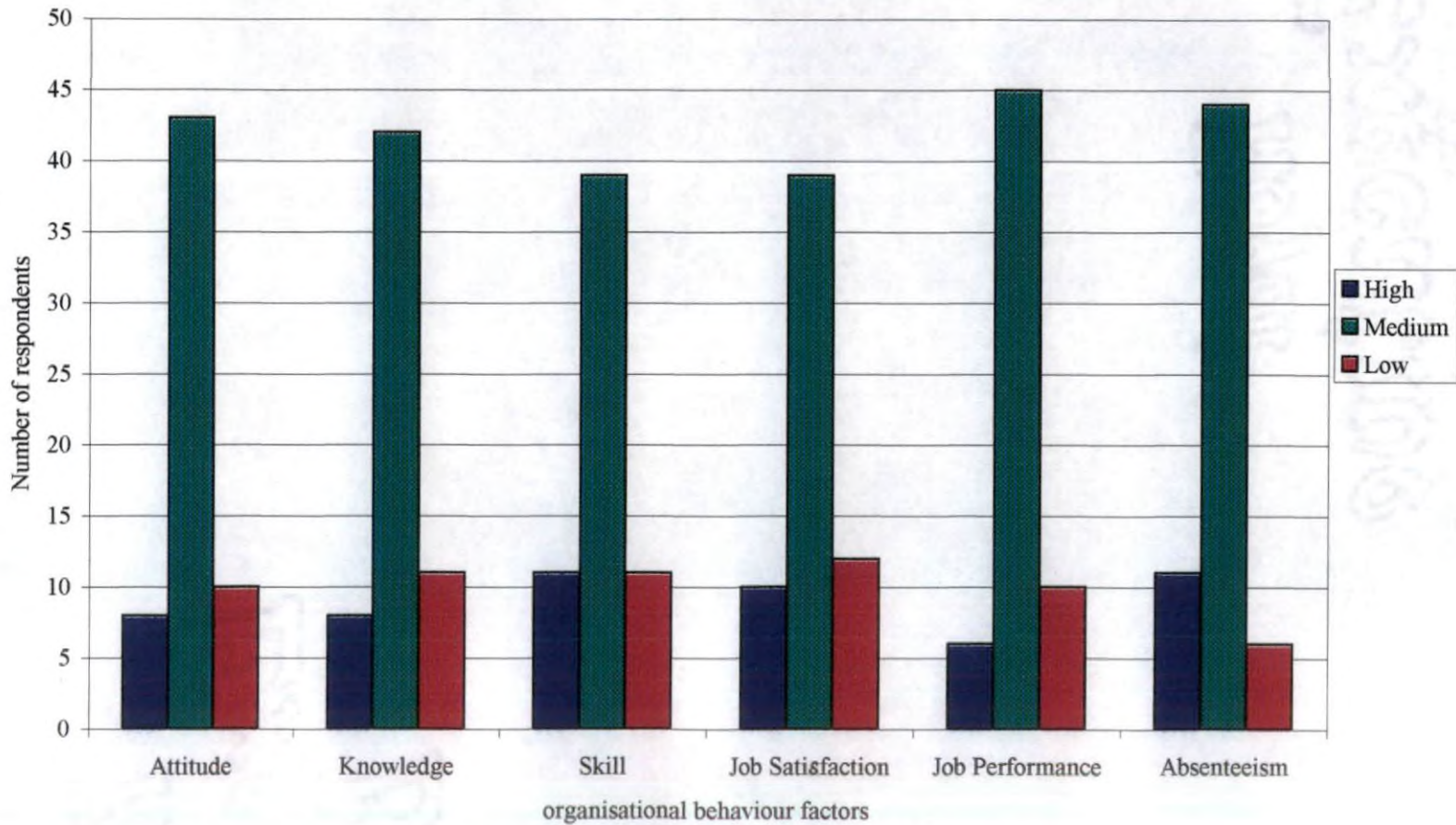


Fig. 3. Distribution of respondents based on organisational behaviour factors

4.2.2 Knowledge of Pig Keeping

Table 16. Distribution of respondents based on knowledge of pig keeping

n=61

Sl. No.	Knowledge of pig keeping	Frequency (f)	Percentage
1.	High [Above 40.06]	8	13.12
2.	Medium [32.60 to 40.06]	42	68.85
3.	Low [Below 32.60]	11	18.03
	Total	61	100.00

Mean=36.33

S.D=3.73

Table 16 reveals that majority of the respondents (68.85 per cent) had medium level of knowledge of pig keeping. The knowledge level of 18.03 per cent of the respondents was low and 13.12 per cent had high knowledge.

4.2.3 Skill in Pig Keeping

Table 17. Distribution of respondents based on skill in pig keeping

n=61

Sl. No.	Skill in pig keeping	Frequency (f)	Percentage
1.	High [Above 22.11]	11	18.03
2.	Medium [16.67 to 22.11]	39	63.94
3.	Low [Below 16.67]	11	18.03
	Total	61	100.00

Mean=19.39

S.D=2.72

The data in Table 17 depicts that majority of the respondents (63.94 per cent) had medium skill in pig keeping whereas 18.03 per cent each fell in the high and low skill categories.



4.2.4 Job Satisfaction

Table 18. Distribution of respondents based on job satisfaction

n=61

Sl. No.	Job satisfaction	Frequency (f)	Percentage
1.	Satisfied [Above 3.18]	10	16.39
2.	Partially satisfied [3.18 to 2.74]	39	63.94
3.	Dissatisfied [Below 2.74]	12	19.67
	Total	61	100.00

Mean=2.96

S.D=0.22

It is evident from Table 18 that majority of the respondents (63.94 per cent) were partially satisfied with their job followed by those who were dissatisfied (19.67 per cent) and 16.39 per cent of the respondents were satisfied with their job.

Table 19. Job satisfaction of farm workers with respect to different aspects of job

Sl.No	Aspects of job	Mean score	Evaluatory rating*
1.	Opportunity to work with team spirit	4.25(1)	Satisfied
2.	Help, guidance and encouragement from supervisors	4.00(2)	
3.	Physical facilities	3.77(3)	Partially satisfied
4.	Status and prestige	3.62(4)	
5.	Praise and recognition for good work	3.54(5)	

6.	Type of work done by you	3.38(6)	Partially satisfied
7.	Residential facilities	3.16(7)	
8.	Freedom for flexibility of work	2.95(8)	
9.	Freedom to pursue original ideas	2.84(9)	
10.	Job security	2.51(10)	
11.	Your present salary	2.44 (11)	
12.	Promotion policy	1.74(12)	Dissatisfied
13.	Opportunity for self development	1.69(13)	
14.	Scope to prove your merit and excellence	1.49(14)	

Mean =2.96

S.D =0.88

Figures in the paranthesis indicate ranks.

* Satisfied = Above 3.84

Partially satisfied = 2.08 to 3.84

Dissatisfied = Below 2.08

As evident from Table 19, the respondents were satisfied with the aspects of job such as the opportunity to work with team spirit and help, guidance and encouragement from supervisors. The farm workers were partially satisfied with physical facilities, status and prestige, praise and recognition for good work, type of work done, residential facilities, freedom for flexibility of work, freedom to pursue original ideas, job security and the present salary. The farm workers were

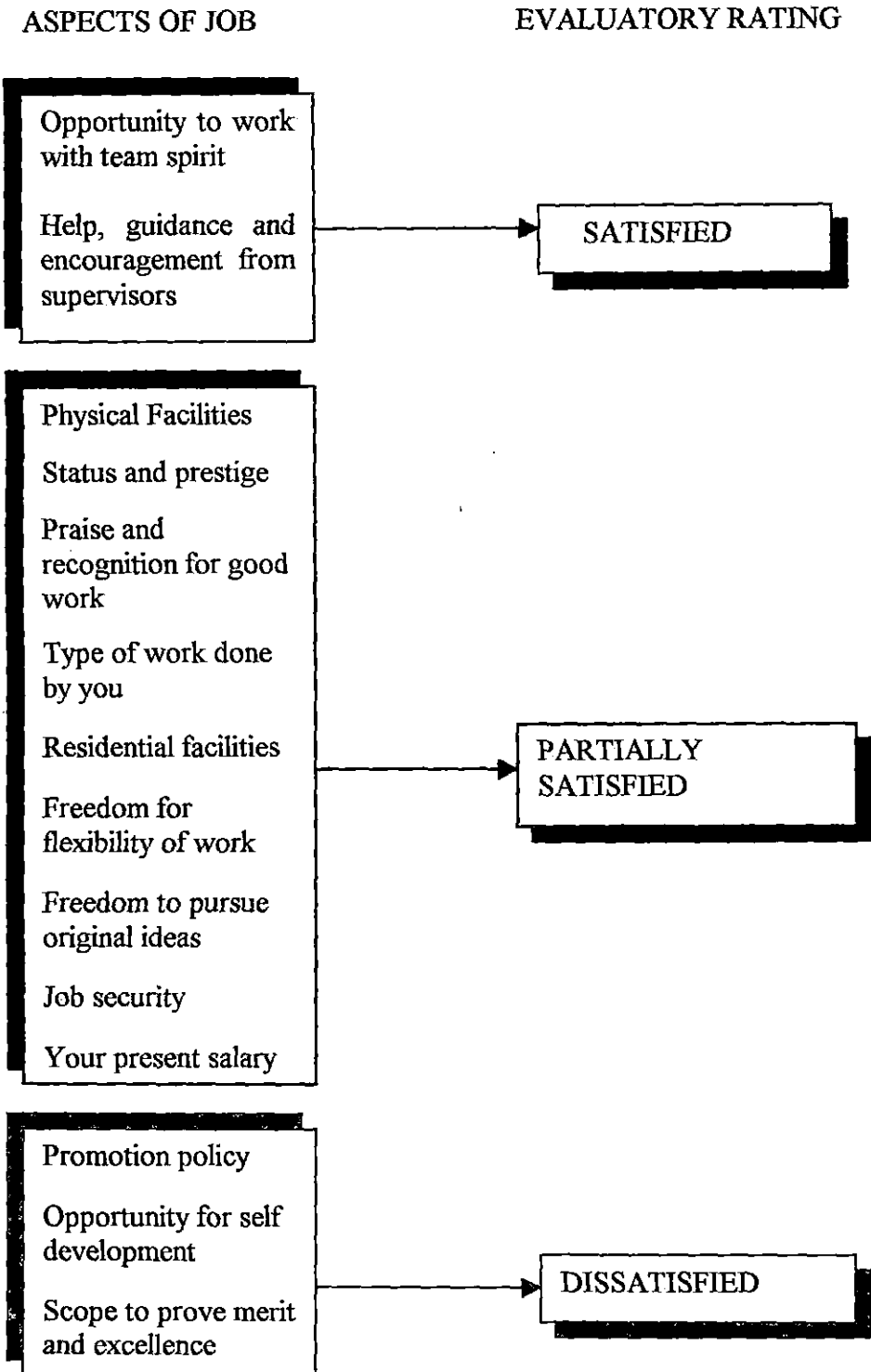


Fig. 4. Job satisfaction of farm workers with respect to different aspects of job

dissatisfied with promotion policy, opportunity for self development and scope to prove their merit and excellence.

4.2.5 Job Performance

Table 20. Distribution of respondents based on job performance

n=61

Sl. No.	Job performance	Frequency (f)	Percentage
1.	High [Above 60.21]	6	9.84
2.	Medium [38.29 to 60.21]	45	73.77
3.	Low [Below 38.29]	10	16.39
	Total	61	100.00

Mean=49.25

S.D=10.96

Table 20 shows that majority of the respondents (73.77 per cent) had medium level of job performance as rated by the supervisors, 16.39 per cent of the respondents had low level of job performance and 9.84 per cent had high level of job performance.

4.2.6 Absenteeism

Table 21. Distribution of respondents based on absenteeism

n=61

Sl. No.	Absenteeism	Frequency (f)	Percentage
1.	High [Above 16.98]	11	18.03
2.	Medium [12.94 to 16.98]	44	72.13
3.	Low [Below 12.94]	6	9.84
	Total	61	100.00

Mean=14.96

S.D=2.02

Table 21 depicts that most of the respondents (72.13 per cent) had medium level of absenteeism as rated by the supervisors. The respondents having

high level of absenteeism were 18.03 per cent and those with low level of absenteeism were 9.84 per cent.

4.3 INTERCORRELATIONS OF ORGANISATIONAL BEHAVIOUR FACTORS

Table 22. Kendall's tau-b intercorrelations of organisational behaviour factors

Sl.No	Variables	Attitude towards the job	Knowledge of pig keeping	Skill in pig keeping	Job satisfaction	Job performance	Absenteeism
1.	Attitude towards the job	—	0.101	-0.012	0.152**	0.035	0.088
2.	Knowledge of pig keeping	—	—	0.530*	0.182**	0.137***	0.085
3.	Skill in pig keeping	—	—	—	-0.050	0.179**	0.090
4.	Job satisfaction	—	—	—	—	0.114	-0.180**
5.	Job performance	—	—	—	—	—	-0.186**
6.	Absenteeism	—	—	—	—	—	—

* Significant at 1% level

** Significant at 10% level

***Significant at 20% level

Table 22 shows that the respondents' attitude towards the job had significant positive correlation with their job satisfaction ($\tau_b = 0.152$). The knowledge of pig keeping was significantly and positively correlated with the skill in pig keeping ($\tau_b = 0.530$), job satisfaction ($\tau_b = 0.182$) and job performance ($\tau_b = 0.137$). The skill in pig keeping had significant positive correlation with the job performance ($\tau_b = 0.179$). The job satisfaction ($\tau_b = -0.180$) and job performance ($\tau_b = -0.186$) had significant negative correlations with the absenteeism.

4.4 CORRELATION BETWEEN FARM WORKERS' ATTITUDE TOWARDS THE JOB AND PRODUCTION PERFORMANCE PARAMETERS OF PIGS

Table 23. Rank order correlation of farm workers' attitude towards the job with production performance parameters of pigs

Sl. No.	Production performance parameters of pigs	' r_s ' values
1.	Age at first mating	0.1500
2.	Conception rate	-0.3833
3.	Farrowing percentage	-0.4625
4.	Litter size at birth	-0.2000
5.	Birth weight	0.1500
6.	Still birth per litter	-0.5167*
7.	Prewaning mortality	0.2000
8.	Weaning weight	0.2833
9.	Weight gain	0.3000
10.	Mortality	0.2833

* $P=0.154$, Significant at 20%

Table 23 reveals that the farm workers' attitude towards the job was negatively and significantly correlated with the stillbirth per litter of pigs

($r_s = -0.5167$). No other production performance parameters had significant correlation with the attitude.

4.5 CORRELATION BETWEEN FARM WORKERS' KNOWLEDGE OF PIG KEEPING AND PRODUCTION PERFORMANCE PARAMETERS OF PIGS

Table 24. Rank order correlation of farm workers' knowledge of pig keeping with production performance parameters of pigs

Sl. No.	Production performance parameters of pigs	' r_s ' values
1.	Age at first mating	0.1667
2.	Conception rate	0.3830
3.	Farrowing percentage	0.1708
4.	Litter size at birth	0.0167
5.	Birth weight	0.1667
6.	Still birth per litter	-0.2167
7.	Prewaning mortality	-0.7833*
8.	Weaning weight	-0.1000
9.	Weight gain	-0.1167
10.	Mortality	-0.3833

* $P=0.013$, Significant at 5%

It is evident from Table 24 that the farm workers' knowledge of farm workers in pig keeping was negatively and significantly correlated with the preweaning mortality of piglets ($r_s = -0.7833$). Knowledge had significant correlation with no other production performance parameters.

4.6 CORRELATION BETWEEN FARM WORKERS' SKILL IN PIG
KEEPING AND PRODUCTION PERFORMANCE PARAMETERS OF
PIGS

Table 25. Rank order correlation of farm workers' skill in pig keeping with
production performance parameters of pigs

Sl. No.	Production performance parameters of pigs	'r _s ' values
1.	Age at first mating	0.2833
2.	Conception rate	0.5000*
3.	Farrowing percentage	0.1625
4.	Litter size at birth	0.1833
5.	Birth weight	0.2833
6.	Still birth per litter	-0.3333
7.	Prewaning mortality	-0.4833**
8.	Weaning weight	-0.3333
9.	Weight gain	-0.3667
10.	Mortality	-0.4333

* P=0.170, Significant at 20%

** P=0.187, Significant at 20%

Table 25 shows that the skill of farm workers in pig keeping was positively and significantly correlated ($r_s = 0.5000$) with the conception rate of pigs, but negatively and significantly correlated ($r_s = -0.4833$) with preweaning mortality of piglets. The production performance parameters except conception rate and preweaning mortality had no significant correlation with the skill in pig keeping.

4.7 CORRELATION BETWEEN JOB SATISFACTION OF FARM WORKERS AND PRODUCTION PERFORMANCE PARAMETERS OF PIGS

Table 26. Rank order correlation of job satisfaction of farm workers with production performance parameters of pigs

Sl. No.	Production performance parameters of pigs	'r _s ' values
1.	Age at first mating	0.0667
2.	Conception rate	0.3833
3.	Farrowing percentage	0.1375
4.	Litter size at birth	-0.3500
5.	Birth weight	0.0667
6.	Stillbirth per litter	0.0167
7.	Prewearing mortality	-0.4000
8.	Weaning weight	-0.7000*
9.	Weight gain	-0.7330**
10.	Mortality	-0.0830

* P=0.036, Significant at 10%

** P=0.025, Significant at 10%

Table 26 shows that the job satisfaction of farm workers was negatively and significantly correlated with weaning weight ($r_s = -0.7000$) and weight gain ($r_s = -0.7330$) of piglets. The job satisfaction had no significant correlation with any other production performance parameters.

4.8 CORRELATION BETWEEN JOB PERFORMANCE OF FARM
WORKERS AND PRODUCTION PERFORMANCE PARAMETERS OF
PIGS

Table 27. Rank order correlation of job performance of farm workers with production performance parameters of pigs

Sl. No.	Production performance parameters of pigs	'r _s ' values
1.	Age at first mating	-0.0833
2.	Conception rate	0.0833
3.	Farrowing percentage	-0.3292
4.	Litter size at birth	0.0667
5.	Birth weight	-0.0833
6.	Stillbirth per litter	-0.2330
7.	Prewaning mortality	-0.4330
8.	Weaning weight	0.1000
9.	Weight gain	0.1167
10.	Mortality	-0.0667

A perusal of Table 27 reveals that the job performance of farm workers had no significant correlation with any of the production performance parameters of pigs.

4.9 CORRELATION BETWEEN ABSENTEEISM OF FARM WORKERS AND PRODUCTION PERFORMANCE PARAMETERS OF PIGS

Table 28. Rank order correlation of absenteeism of farm workers with production performance parameters of pigs

Sl. No.	Production performance parameters of pigs	'r _s ' values
1.	Age at first mating	-0.2833
2.	Conception rate	-0.0167
3.	Farrowing percentage	0.0875
4.	Litter size at birth	-0.1667
5.	Birth weight	-0.2833
6.	Stillbirth per litter	0.0333
7.	Prewaning mortality	0.6330*
8.	Weaning weight	-0.1000
9.	Weight gain	0.0167
10.	Mortality	0.7333**

* P= 0.067, Significant at 10%

** P= 0.025, Significant at 10%

It is evident from Table 28 that absenteeism of farm workers was positively and significantly correlated with production performance parameters of pigs such as preweaning mortality ($r_s = 0.6330$) and mortality ($r_s = 0.7333$). No significant correlations were found between the other production performance parameters and absenteeism.

INDEPENDENT VARIABLES

DEPENDENT VARIABLES

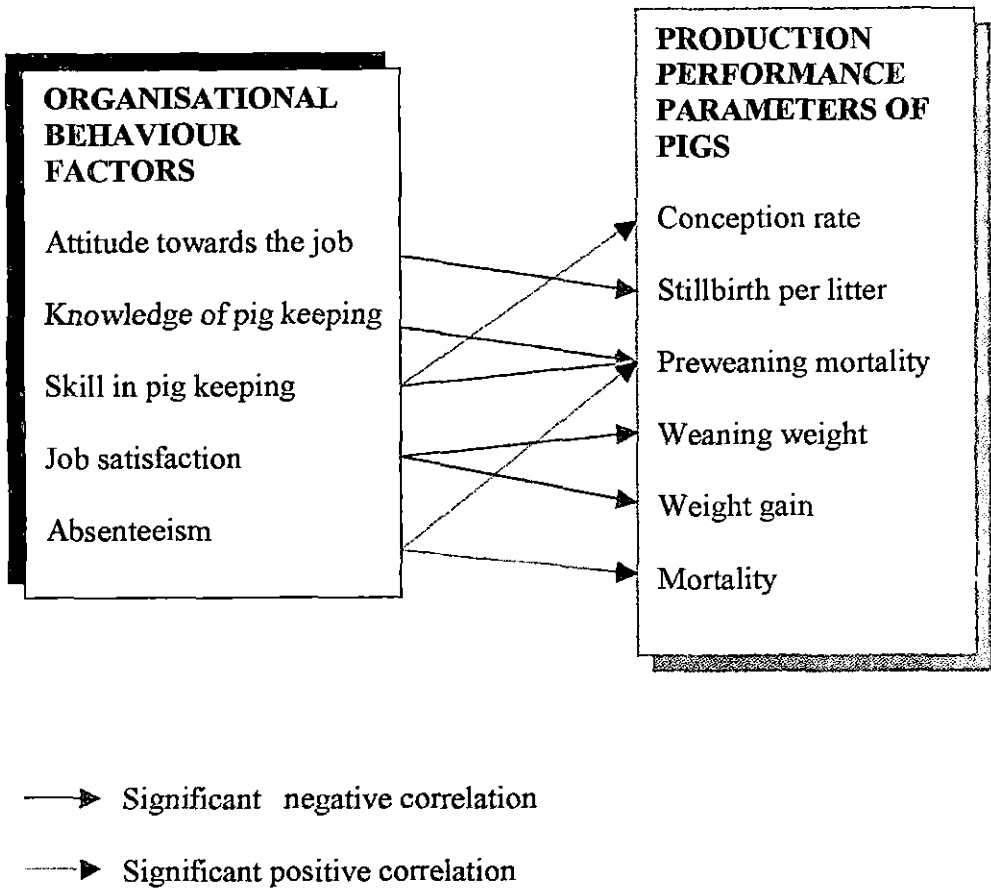


Fig. 5. Relationship between organizational behaviour factors of farm workers and production performance parameters of pigs

Discussion

5. DISCUSSION

The results of the study are discussed under the following headings.

5.1 Personal profile of the respondents

5.2 Distribution of respondents based on the organizational behaviour factors.

5.3 Intercorrelations of the organizational behaviour factors

5.4 Relationship between the organizational behaviour factors of farm workers and the production performance parameters of pigs.

5.1 PERSONAL PROFILE OF THE RESPONDENTS

The analysis of the personal profile of the respondents has brought out some valid findings about the family background as well as the economic and educational status of them.

The finding that most of the respondents belonged to nuclear family and had two or three children indicated that they were pre-occupied with family obligations. Though no tall claims could be made of the educational status of the respondents, it was not below the one expected for farm labourers. Except a few, all were literate and had received formal education. Three-fourth of the respondents had acquired secondary school education or higher levels.

As for the economic status, most of the respondents were dependent on their monthly wages for livelihood. However, the total monthly family income of a vast majority of the farm workers was either between rupees 3000 to 6000 or even above 6000 indicating that the economic status was medium.

The gender was a criterion in the allotment of labourers to pig farms as revealed by some of the authorities of AHD and KLDB. The male labourers were preferred to female as the pig farm operations were considered to be tedious. This might be the reason behind the substantial number of male labourers.

Majority of the respondents studied were old aged whereas, only a few were young. The fact that recent appointments were not made might be the reason for this. The substantial number of temporary labourers appointed on contract basis was the reason for most of the respondents having a working experience of less than ten years, as reported by the authorities of AHD.

Except a few, no respondents had received any training other than the one acquired by every day experience. This calls for an initiative on the part of the organizations to impart periodic on-farm trainings to the farm workers to improve the quality of labour.

The residences of most of the farm workers were near the work place. Also they were resorting to less expensive means of transportation as bus, cycle or walk to reach the work place indicating that the labourers were comfortable in these aspects.

5.2 DISTRIBUTION OF RESPONDENTS BASED ON THE ORGANISATIONAL BEHAVIOUR FACTORS

It is worth noting that as for the organizational behaviour factors, almost two-third of the respondents belonged to the medium category only. About the knowledge of pig keeping, attitude towards the job, job satisfaction and job performance, more number of respondents fell in the low category than the high. Regarding absenteeism, the number of respondents in the high category was twice that of the low category and this result calls for serious attention.

The above findings bring to light the inadequacies in the quality of labour

available in the organized pig farms. Such shortfalls in the stockmanship of farm workers and the effectiveness with which this vital resource is deployed in practice constitute the most serious constraint in improving the welfare, health and production efficiency of the farm livestock as opined by English and McPherson (1994).

This points out to the need of adopting suitable complementary approaches to improve the stockmanship in our organized pig farms. Undoubtedly, periodical training would serve as the best means to inculcate in the farm workers the right attitude towards the job. The training should also give emphasis on the knowledge and skill aspects of effective handling, management and care of farm animals. Also there should be attempts on the part of the organizations to see that the farm workers are satisfied with various aspects of the job and sufficiently motivated to excel in the job.

The paramount need for training is emphasized by the finding that the farm workers were dissatisfied with the aspects of job as opportunity for self-development, promotion policy and scope to prove their merit and excellence. Also, there should be a career development plan based on assessment in the workplace for providing them formal opportunities for career progression. Poor communication opportunities with management, sub-optimal provisions for animal care and the lack of both training provisions and recognition of achievements were reported as the main causes of job dissatisfaction by Howard *et al.* (1990). However, they were satisfied with the opportunity to work with team spirit and the help, guidance and encouragement from supervisors probably because the organizational climate might have been friendly, informal and democratic. It is also notable that they were only partially satisfied with the type of work and status and prestige of the job, which might reflect the lack of favourable attitude towards the job. Bray (1992) suggested status enhancing job titles as one of the important positive influences on the job satisfaction of stockpeople. Only partial satisfaction could be noticed with regard to salary, job security, physical and residential facilities and praise and recognition for good work. This calls for the

use of appropriate motivational techniques through both the monetary and non-monetary incentives by the organizations for recognizing the higher attainments of the farm workers.

5.3 INTERCORRELATIONS OF THE ORGANISATIONAL BEHAVIOUR FACTORS

The possible explanation for the strong positive correlation between the knowledge and the skill of farm workers might be that a sound basic knowledge and understanding of the animals and their requirements is essential to have the technical efficiency, especially the handling, observational and perceptual skills.

The significant positive intercorrelation of job satisfaction and attitude towards the job is consistent with the finding of Coleman *et al.* (1998) that stockpersons who scored high with regard to the attitude towards working with pigs showed high job satisfaction. In this context, it is worth mentioning the opinion of English *et al.* (2002) that the faulty attitude to the job and the pigs can be a negative consequence of job dissatisfaction of stockmen in swine farms. Hence it may be inferred that the attitude of farm workers towards the job can provide insight into the extent to which they are satisfied with different aspects of the job and vice-versa.

Improving knowledge through education and skill through training were suggested as two important complementary approaches for producing high quality stockmen by English *et al.* (2002) while discussing the mill wheel concept. This may substantiate the observation of the present study that the job performance was positively and significantly correlated with both the knowledge and skill of farm workers. According to Vroom (1964), the level of job performance of a worker on a task is a direct function of his ability to perform that task. This proposition is supportive of the significant and positive correlation between skill and job performance.

The positive correlation of the knowledge of farm workers with both the job satisfaction and job performance is supportive of the contention of Lloyd (1975) that training to improve understanding of the birds' needs and associated skills would not only enhance animal care but would also have positive influences on job satisfaction and job performance. Further, the ignorance of pig disease problems and the lack of training provision were pointed out as two important reasons for the job dissatisfaction of farm workers by English *et al.* (2002). Improving the knowledge of farm workers in terms of a better understanding or awareness of the basic needs of the animals, how to provide for these needs, detect problems and rectify the problems more promptly and effectively may enhance their confidence and self-morale, which is likely to provide further motivation and job satisfaction.

Another observation of the present study, which deserves attention, is the negative correlation of absenteeism of farm workers with both their job satisfaction and job performance. Similar finding was reported by Vroom (1964). English *et al.* (2002) mentioned poorer time keeping and increased absenteeism as the negative consequences of job dissatisfaction of swine farm workers. It is quite natural that dislike of the work and working environment eventually leads to the tendency of escapism. Hence it is essential that the management ascertains from the farm workers the possible reasons for dissatisfaction and take adequate steps for the removal of these negative influences, which can create a good platform for motivating influences to function.

5.4 RELATIONSHIP BETWEEN THE ORGANISATIONAL BEHAVIOUR FACTORS OF FARM WORKERS AND THE PRODUCTION PERFORMANCE PARAMETERS OF PIGS

According to English *et al.* (1988) good stockmanship is a well moulded combination of such components as appropriate knowledge, technical efficiency (skills), patience, good judgement and observational abilities.

Many studies have emphasised the important influence of high quality stockmanship on both animal performance and welfare (Hemsworth *et al.* 1981a; 1981b; 1987; 1989; 1994b; 1994c; Hemsworth and Barnett 1987; Seabrook 1984).

Some of the findings of the present study are supportive of the vast array of evidences in this regard. The observations as the negative correlation of the farm workers' knowledge of pig keeping and skill in pig keeping with preweaning mortality of piglets, the positive correlation of absenteeism of farm workers with the preweaning mortality, and mortality; the negative correlation between farm workers' attitude towards the job and still birth per litter and the positive correlation of farm workers' skill in pig keeping and conception rate of pigs deserve attention in explaining the relationship between the organisational behaviour of farm workers and production performance of pigs.

It is interesting to note that among the various production performance parameters studied, the preweaning mortality of piglets was the one potentially associated with some of the organisational behaviour factors. This finding deserves attention as the preweaning mortality is a potentially explanatory variable of preweaning performance of piglets, which in turn is a major underlying factor for the production performance of pigs (Ravel *et al.*, 1996a).

Consolidating the various views on the influence of stockmanship on farm animal production would adequately explain the possible reasons for the observations of the present study.

Hemsworth *et al.* (1989) and Coleman *et al.* (1998) found that the attitude of the stockpeople toward interacting with the farm animals were correlated with the behaviour of the stockpeople, which in turn was found to be correlated with the production performance of pigs. The negative correlation observed between attitude and stillbirth per litter in the present study is in line with this finding. Seabrook (1984; 1994) reported that the personality traits or attributes of high producing

stockpersons were not easy going, considerate, not meek, patient, unsociable, not modest, independently minded, persevering, not talkative and confident. It may be contented that the different attitudes of farm workers to the job might be associated with different ways of handling and managing the animals. Here it is worth mentioning the finding of Hemsworth *et al.* (1989) that the stockpersons who felt pigs were difficult to move tended to use more aversive handling. Enjoying petting pigs and finding the pigs easy to handle were correlated with the total number of pigs born alive and the number of litters per sow per year.

The observation that the preweaning mortality of piglets had negative correlation with both knowledge and skill of farm workers is in agreement with the finding of Duran (1996) that the high mortality of piglets in swine farms was due to lack of basic stockmanship, inability to detect injured and diseased pigs, insufficient knowledge about the diseases involved and no training in treatment and care of casualties. Perhaps this indicates that the herdsman's ability to recognize and deal with health problems in a prompt and effective manner is a major factor in determining mortality in all production areas (Wilson *et al.* 1986). Here it is worth discussing the opinion of Seabrook (1984) that the trained and skilled workers will clearly influence performance and the system efficiently managed will achieve higher performance. Also, English and McPherson (1994) opined that high quality stockmanship could be achieved only by acquisition of extensive knowledge on the animal's requirements and development of skills in the provision of such requirements.

The farm workers' skills in the identification of the animals in heat, taking the animals in heat for breeding and efficient handling and control of the breeding boars have a crucial role in increasing the conception rate. This might be the reason for the positive correlation of skill of the farm workers with the conception rate of pigs.

The job satisfaction of the farm workers had a significant negative correlation with two of the important production performance parameters of pigs such as

weaning weight and weight gain. There is no obvious explanation for this unexpected negative correlation. However, one possible reason could be that, for the farm workers, job satisfaction might have probably meant job security, adequate salary and physical facilities which would make their life comfortable. The satisfaction of higher order needs as self-actualization through achievement in work, which meant enhanced output of the farm in terms of the production performance of pigs, might not be of much importance to them. It is natural that as job satisfaction increases, psychological security enhances. Here it is worth discussing the opinion of Seabrook (1984) that a little tendency to insecurity may help the stockperson to be critical about his way of working, in other ways to stay alert. However, the empirical question raised by the result on the negative correlation between job satisfaction and two of the production performance parameters of pigs calls for further investigation.

The piglets need considerable care and constant supervision before weaning, the lack of which obviously leads to high mortality. The commitment on the part of farm workers is essential for reducing the mortality of piglets at this stage. This might be the reason for the positive correlation observed between absenteeism of farm workers and the preweaning mortality and mortality of piglets. The negative correlation observed of absenteeism with both job satisfaction and job performance would also substantiate this finding.

In nutshell, it could be inferred that the quality of labour available in the organized swine farms had a major influence on the production performance of pigs. This points out to the need of monitoring the efficiency of utilization of this vital resource and taking timely and adequate measures as education, training and other motivational techniques to improve the quality of stockmanship for the welfare, health and production efficiency of pigs. The available scientific recommendations on the needs of the animals in terms of nutrition, disease prevention, housing, climate, space, social requirements and welfare can be utilized adequately for production, only if the farm workers are of high quality in terms of knowledge, skills,

favourable attitude and are also highly motivated and committed. Therefore, there is need for more intellectual and development investments in terms of education, training, research and infrastructure for the improvement of this vital component of swine production system.

Summary

6. SUMMARY

This is a study on the organizational behaviour of farm workers as antecedent to the performance of pigs in the organized swine farms of Kerala. The study attempted to determine the relationship between the organizational behaviour factors of farm workers and the production performance parameters of pigs. The nine organized pig farms following standard management systems, seven under the Kerala Animal Husbandry Department and the farms of Kerala Livestock Development Board and Kerala Agricultural University were the locale of the study. A total of 61 farm workers who actually involved with the animals on a daily basis and having a working experience of at least six months were the respondents of the study. The data regarding the organizational behaviour factors *viz.*, attitude towards the job, knowledge of pig keeping, skill in pig keeping and job satisfaction were collected through single interview sessions with the respondents using structured interview schedule. The job performance and absenteeism were assessed using supervisory rating. The data on the production performance parameters of pigs were collected from farm records for a period of six months from May 2002 to October 2002. Statistical tools and procedures as frequency analysis, estimation of percentage, mean, standard deviation, Kendall's tau-b and Spearman's rank order correlation were used for analyzing the data.

Majority of the respondents studied were male, old aged, married, belonging to nuclear family and having two or three children. Except a few, all were literate and two-third of the respondents were secondary school educated or of higher levels. Most of the farm workers had a working experience of less than ten years and except a few none had received any training. Majority of the farm workers travelled a distance of less than five kilometers from their residences to the work place and adopted either bus or walk as means of transportation. The monthly wages was the only source of income for most of the farm workers. The total monthly family

income of a vast majority was either between rupees 3000 to 6000 or even above 6000.

As for the organizational behaviour factors, almost two-third of the respondents belonged to the medium category only. With regard to attitude towards the job, knowledge of pig keeping, job satisfaction and job performance, more number of respondents fell in the low category than the high. Regarding skill in pig keeping there were equal number of respondents in both the high and low categories. Regarding absenteeism, the high category comprised of double the number of respondents than the low. The farm workers expressed satisfaction with the aspects of job as the opportunity to work with team spirit and help, guidance and encouragement from supervisors whereas, dissatisfaction was shown with aspects as promotion policy, opportunity for self-development and scope to prove merit and excellence. They were partially satisfied with the salary, job security, praise and recognition for good work, physical facilities, residential facilities, freedom to pursue original ideas, freedom for flexibility of work, status and prestige and type of work done.

Intercorrelation of organizational behaviour factors was worked out using Kendall's tau-b rank order correlation. Significant positive correlations were observed between knowledge of pig keeping and skill in pig keeping; attitude towards the job and job satisfaction; knowledge of pig keeping and job satisfaction; knowledge of pig keeping and job performance and skill in pig keeping and job performance. Absenteeism was significantly and negatively correlated with both job satisfaction and job performance.

The relationship of the organizational behaviour factors of farm workers with the production performance parameters of pigs was found out using Spearman's rank order correlation. A significant negative correlation was found between farm workers' attitude towards the job and stillbirth per litter of pigs. The farm workers' knowledge of pig keeping and skill in pig keeping had significant negative correlations with preweaning mortality. The skill had significant positive correlation

with conception rate. Weaning weight and weight gain of piglets were significantly and negatively correlated with job satisfaction. There was significant positive correlation of absenteeism of farm workers with both the preweaning mortality and mortality of piglets.

IMPLICATIONS

Based on the findings of the study, the following broad implications were drawn.

1. The present study can pave way to elaborate studies, designed to find out the specific attitude, behaviour, cognitive and skill areas in which the farm workers require improvement. Training need assessment should be carried out through performance assessment in the workplace. It is ideal to analyse the stock people's behaviour to the animals through observing their actions and how they interact with the animals in a farm situation.
2. Periodical on-farm trainings should be organized to improve the quality of stockmanship in terms of knowledge, attitude and skills.
3. A career development plan should be established for the farm workers. Progression should be based on simple and inexpensive systems of assessment in the work place. Status enhancing job titles have much to do with boosting the self-morale of farm workers.
4. Higher attainments of the farm workers should be recognized through both monetary and non-monetary incentives. This will encourage and motivate them to perform better.

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Appendix

KERALA AGRICULTURAL UNIVERSITY
COLLEGE OF VETERINARY AND ANIMAL SCIENCES
MANNUTHY

Dr. R.S. Jiji
Assistant Professor
Department of Extension
COVAS, Pookot

To

Dated:

Sir/Madam,

Sub: Education – PG – M.V.Sc. in Veterinary Extension – Research Work – Relevancy rating – reg.

One of my M.V.Sc. students Dr. V. Uma has taken up a research topic entitled **“Organisational behaviour of farm workers as antecedent to the performance of pigs in organized farms”**. The objective of the study is to find out the relationship between organizational behaviour and production performance of pigs. In this study, we need to assess the knowledge and skill of pig farm labourers of certain selected pig farms of Kerala (AHD, KLDB and KAU) in the care and management of pigs.

For this purpose, an interview schedule consisting of items to measure the knowledge and skill has been prepared. I request you to serve as a judge to rate the relevance of the items to be incorporated in the final interview schedule. Therefore, kindly go through the items and indicate their relevance on a four point continuum, viz. very relevant, relevant, somewhat relevant and not relevant. I shall be obliged if you could return the same at the earliest.

Thanking you,

Encl: List of items

Yours faithfully,


(Dr. R.S. Jiji)

ORGANISATIONAL BEHAVIOUR OF FARM WORKERS AS ANTECEDENT
TO THE PERFORMANCE OF PIGS IN
ORGANIZED FARMS
INTERVIEW SCHEDULE

Part - I

PERSONAL PROFILE

1. Name of the organisation :
2. Name of respondent :
3. Age :
4. Sex :
5. Marital status :
6. Number of children :
7. Family details :

Sl. No.	Number of persons	Relationship with respondent	Age	Sex	Occupation

8. Mode of transportation to work place :
9. Distance to work place from residence:
10. Educational qualification :
 - (i) Primary school educated (1-4)
 - (ii) Secondary school educated (5-7)
 - (iii) High school educated (8-10)
 - (iv) Collegiate educated
 - (v) Any other (specify)

11. Working experience :
12. Number of trainings attended :
13. Source of family income :
14. Income from monthly wages :
15. Monthly income from other sources :

Part II

ORGANIZATIONAL BEHAVIOURAL FACTORS

1. ATTITUDE TOWARDS THE JOB

Tick mark (✓) the phrase against each statement which best describes how you feel about your present job. There are no right or wrong answers. We would like your honest opinion on each one of the statements.

No.	Statements	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1.	My job is like a hobby to me					
2.	My job is usually interesting enough to keep me from getting bored					
3.	It seems that my friends are more interested in their jobs					
4.	I consider my job rather unpleasant					
5.	I consider my work more than my leisure time					

6.	I am often bored with my job					
7.	I feel fairly well satisfied with my present job					
8.	Most of the time I have to force myself to go to work					
9.	I am satisfied with my job for the time being					
10.	I feel that my job is no more interesting than others I could get					
11.	I definitely dislike my work					
12.	I feel that I am happier in my work than most other people					
13.	Most days I am enthusiastic about my work					
14.	Each day of work seems likely it will never end					
15.	I like my job better than the average worker does					
16.	My job is pretty uninteresting					
17.	I find real enjoyment in my work					
18.	I am disappointed that I ever took this job					

2. KNOWLEDGE OF PIG KEEPING

1.	The breeding boars should be housed	In individual sties (1) ----- Any other (0)
2.	Boars used for breeding purpose should be free from physical defects	Yes (1) ----- No (0)
3.	It is desirable to feed boars	After service (1) ----- Before service (0)
4.	Greens should be fed to the boars if kept indoors	Yes (1) ----- No (0)
5.	What is the time of feeding schedule practised for boars?	Correct (1) ----- Incorrect (0)
6.	Unless the boar is handled firmly, he can be dangerous	Yes (1) ----- No (0)
7.	Sows of the same size and condition can be housed in small groups	Yes (1) ----- No (0)
8.	It is desirable to house the bred females and gilts	Separately (1) ----- Any other (0)
9.	It is ideal to clean the pregnant female before taking into the farrowing pen	Yes (1) ----- No (0)

10.	The important symptoms of heat are	
	(i) Swollen vulva	Correct (1) ----- Incorrect (0)
	(ii) Standing to pressure	Correct (1) ----- Incorrect (0)
	(iii) Mounting on other pigs	Correct (1) ----- Incorrect (0)
11.	Apt time for first mating	24 hrs after the onset of heat (1) ----- Any other (0)
12.	Apt time for second mating	8-12 hrs after the first mating (1) ----- Any other (0)
13.	Gestation period of pigs is about	4 months (1) ----- Any other (0)
14.	What is the time of feeding schedule for gilts practised in this farm?	Correct (1) ----- Incorrect (0)
15.	What is the time of feeding schedule for pregnant sows practised in this farm?	Correct (1) ----- Incorrect (0)
16.	It is essential to avoid overcrowding, mixing of new and old stock, slippery ground and over exciting of pregnant sows	Yes (1) ----- No (0)

17.	Where shall the farrowing sows be housed?	Completely enclosed sties (1) ----- Any other (0)
18.	When the pregnant sows are to be transferred to farrowing pens?	One or two weeks before farrowing (1) ----- Any other (0)
19.	One sow with its litter is to be accommodated in a single farrowing cum nursing sty	Yes (1) ----- No (0)
20.	What is the purpose of providing guard rails?	To reduce the chance of crushing the piglets by sows (1) ----- Any other (0)
21.	After farrowing, placenta will be expelled	Within few hours (1) ----- Any other (0)
22.	Placenta, dead piglets and soiled bedding are to be removed and disposed as early as possible	Yes (1) ----- No (0)
23.	How will you recognize the approach of farrowing?	Correct (1) ----- Incorrect (0)
24.	What is the feeding schedule for farrowing sows?	Correct (1) ----- Incorrect (0)
25.	What is the feeding schedule for piglets before weaning?	Correct (1) ----- Incorrect (0)
26.	How the orphan piglings (sow dies or reluctant to nurse) are fed?	Correct (1) ----- Incorrect (0)

27.	Uncastrated males and females should not be housed together beyond the age of	Four months (1) ----- Any other (0)
28.	What is the feeding schedule for growers?	Correct (1) ----- Incorrect (0)
29.	Name some common symptoms of FMD observed in this farm	Correct (1) ----- Incorrect (0)
30.	Sick animals can be identified by symptoms such as unthriftiness and off feed	Yes (1) ----- No (0)
31.	In this farm, what is the deworming schedule followed?	Correct (1) ----- Incorrect (0)
32.	Diseased animals should be kept separately from healthy animals.	Yes (1) ----- No (0)
33.	How the animals died out of infectious diseases are buried?	Correct (1) ----- Incorrect (0)
34.	What are the measures taken to reduce the body temperature of (i) Breeding boars	Correct (1) ----- Incorrect (0)
	(ii) Gilts and dry sows	Correct (1) ----- Incorrect (0)
	(iii) Sow with litter	Correct (1) ----- Incorrect (0)

	(iv) Growers	Correct (1) ----- Incorrect (0)
35.	Clean water for drinking should be provided <i>ad libitum</i> to pigs of all age groups.	Yes (1) ----- No (0)
36.	Adequate protection against direct sunlight shall be ensured by providing shade.	Yes (1) ----- No (0)
37.	Cleaning of sties should be a routine practice.	Yes (1) ----- No (0)
38.	The farm premises should be cleaned	Every day (1) ----- Any other (0)
39.	Feed troughs and water tanks should be cleaned	Daily (1) ----- Any other (0)
40.	Farrowing sties should be cleaned with disinfectants before housing the sows	Yes (1) ----- No (0)
41.	Manures are disposed in	Manure pit (1) ----- Any other (0)
42.	Sewage water should be drained into	Compost tank (1) ----- Any other (0)
43.	Feed should not be old and putrefied	Yes (1) ----- No (0)

3. SKILL IN PIG KEEPING

1.	Leading the boars for exercise	Able to do (1) ----- Unable to do (0)
2.	Handling and control of the breeding boar	Able to do (1) ----- Unable to do (0)
3.	Identification of the animals in heat	Able to do (1) ----- Unable to do (0)
4.	Taking the animals in heat for breeding	Able to do (1) ----- Unable to do (0)
5.	Efficient feeding of gilts, dry sows and pregnant animals	Can do (1) ----- Cannot do (0)
6.	Taking the sows to farrowing pen	Able to do (1) ----- Unable to do (0)
7.	Identification of the symptoms of farrowing	Can do (1) ----- Cannot do (0)
8.	Lead the animals for exercise	Can do (1) ----- Cannot do (0)
9.	Handling the growers while transferring to different pens	Able to do (1) ----- Unable to do (0)

10.	Identification of poor growers	Can do (1) ----- Cannot do (0)
11.	Identify the sick animals in a group	Able to do (1) ----- Unable to do (0)
12.	Doing first aid for Heat stroke	Can do (1) ----- Cannot do (0)
13.	Deworm the pigs with correct dosage of drugs	Confident to do (1) ----- Not confident to do (0)
14.	Dressing the wounds	Able to do (1) ----- Unable to do (0)
15.	Disposing animals died out of infectious diseases	Can do (1) ----- Cannot do (0)
16.	Sprinkling of water to reduce the body temperature	Can do (1) ----- Cannot do (0)
17.	Provide water in wallowing tank	Able to do (1) ----- Unable to do (0)
18.	Spraying of sties with disinfectant solution	Able to do (1) ----- Unable to do (0)
19.	Efficient cleaning of feed troughs and water troughs	Can do (1) ----- Cannot do (0)

20.	Cleaning the animals	Can do (1) ----- Cannot do (0)
21.	Removal of placenta, dead piglets, soiled bedding etc. from the farrowing pen	Able to do (1) ----- Unable to do (0)
22.	Dispose the manure into manure pit	Can do (1) ----- Cannot do (0)
23.	Keeping the floor non-slippery and free from dampness	Able to do (1) ----- Unable to do (0)
24.	Mixing of feed	Able to do (1) ----- Unable to do (0)

4. JOB SATISFACTION

How satisfied are you on the various aspects of your job? Please tick mark the most appropriate alternative to the items given below.

Sl. No.	Statements	Very much satisfied	Satisfied	Partially satisfied	Dissatisfied	Very much dissatisfied
1.	Your present salary					
2.	Job security					
3.	Praise and recognition for good work					
4.	Physical facilities					
5.	Residential facilities					

6.	Opportunity to work with team spirit					
7.	Help, guidance and encouragement from supervisors					
8.	Opportunity for self development					
9.	Promotion policy					
10.	Freedom to pursue original ideas					
11.	Freedom for flexibility of work					
12.	Status and prestige					
13.	Type of work done by you					
14.	Scope to prove your merit and excellence.					

5. JOB PERFORMANCE

Bipolar adjective scales with seven points are given below. Please judge the job performance of each of the farm labourers working under you by tick marking (✓) in the appropriate boxes for each pair of adjectives.

Interested								Disinterested
Knowledgeable								Ignorant
Unskilled								Skilled
Sincere								Insincere
Irregular								Punctual
Active								Passive
Slow								Fast
Enthusiastic								Not enthusiastic
Dutiful								Not dutiful
Resourceful								Unresourceful

Resourceful - can perform the work well without close supervision

6. ABSENTEEISM

Make an 'X' on the line to give your opinion about the degree of "absenteeism" of farm labourers.

		Never		Sometimes		Always
1	Keeps away from duty without permission	1	2	3	4	5
2	Unavailable in the work area	1	2	3	4	5
3	Comes late for duty	1	2	3	4	5
4	Ready to work even without availing eligible leave	5	4	3	2	1

**ORGANISATIONAL BEHAVIOUR OF FARM
WORKERS AS ANTECEDENT TO THE
PERFORMANCE OF PIGS IN ORGANIZED FARMS**

V. UMA.

**Abstract of a thesis submitted in partial fulfilment of the
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ABSTRACT

The objective of the investigation was to study the relationship between organizational behaviour factors of farm workers and production performance parameters of pigs. The nine organized pig farms; seven under Kerala Animal Husbandry Department and the farms of Kerala Livestock Development Board and Kerala Agricultural University were the locale of the study. A total of 61 farm workers who actually involved with the animals on a daily basis and having a working experience of at least six months were the respondents. The data regarding the organizational behaviour factors *viz.* attitude towards the job, knowledge of pig keeping, skill in pig keeping and job satisfaction were collected from the respondents using structured interview schedule. Job performance and absenteeism were assessed through supervisory rating. The data on production parameters were collected from farm records.

About two-third of the respondents were in the medium category for all the organizational behaviour factors. The respondents were satisfied the most with the job aspect 'opportunity for team work' and dissatisfied the most with 'scope to prove merit and excellence'.

Intercorrelations of organizational behaviour factors were worked out using Kendall's tau-b rank order correlation. Significant positive correlations were observed between knowledge and skill; attitude and job satisfaction; knowledge and job satisfaction; knowledge and job performance and skill and job performance. Absenteeism had significant negative correlations with both job satisfaction and job performance.

The relationship of organizational behaviour factors with production parameters was worked out using Spearman's rank order correlation. A significant negative correlation was found between attitude towards job and stillbirth per litter. Farm workers' knowledge and skill had significant negative correlations with

preweaning mortality. Skill had significant positive correlation with conception rate. Job satisfaction had significant negative correlations with weaning weight and weight gain of piglets. Absenteeism had significant positive correlations with preweaning mortality and mortality.