Chapter 3

Farmers' objectives and attitudes toward pig production

An understanding of backyard pig production necessitates knowledge of the objectives and underlying attitudes of the persons involved in the pig-raising activities. The detailed socio-economic background discussed in the previous chapter provides the context for a study of pig production by explaining the economic and social situation of the study participants and of their surrounding community. The next step in investigating the role of backyard pig production should be to introduce the farmers' own ideas relating to their activity of raising pigs.

These ideas should include the farmers' objectives, which must be understood in order to evaluate the benefits to the household of this activity. Furthermore, since farmers' management practices are affected by their beliefs, it is useful to explore the farmers' own knowledge about pig-raising practices. This will help later when comparing the empirical economic efficiency of production under different management techniques. Farmers' perception of the factors limiting their production, that is, the constraints they face, should also be understood, since their concerns

will influence their management decisions. In addition, farmers' criteria for selling their pigs will show what sort of conditions are needed to finish the cycle of raising and finally selling their pigs.

The following sections will present the results from the formal survey, which questioned farmers on their objectives, knowledge, perceived constraints, and criteria for sale. Finally, in the last section of the chapter, farmers' attitudes towards pig-raising will be presented, through the formal process of attitude measurement. This technique provides a quantitative indication of how each respondent ranks in regards to a certain attitude: in this study, farmers were tested on to what degree a concern for making economic profits motivated their pig production.

3.1 Farmers' objectives

In individual interviews, pig farmers from each household explained their objectives in raising pigs and prioritized in importance the benefits which they perceived as resulting from pig-raising. On the basis of the informal survey discussions with farmers, several benefits were gathered. The five reasons for pig-raising which farmers

were asked to rank can be described in brief as:

1. pig-raising provides a main and continual source of income.
2. pig-raising provides a minor or supportive source of income.
3. pig-raising functions as a method of saving cash by investing it in a longer-term project.
4. pig-raising lets one use extra time efficiently, which otherwise would not be used.
5. pig-raising can be done by elders or those who cannot work at hard jobs.

Results are presented in Table 8 and Figures 19-20.

Farmers from small farms most often chose "minor or supportive income" as the most important reason for raising pigs (38 percent). Some farmers chose other reasons as their primary objective, such as "using free time" (19 percent) and "saving cash" (17 percent). Ranked second in importance by most small-scale farmers was "saving cash" (28 percent), with "using free time" (23 percent) and "a job for elders" (20 percent) also selected. Not all farmers selected a "third-most important objective", but those that did chose " using free time" (27 percent), "a job for elders" (19 percent) or "supportive income" (17 percent).

A general picture emerges in which small-scale farmers raise pigs especially as supportive income, and secondarily, as a way to save cash and make use of time. Informal discussion often led to the farmers' idea that if they did not raise pigs, and so did not need to keep cash aside for pig feed, they would spend their money on many small unnecessary things, such as sweets or alcohol. But by raising pigs they "tied up" their petty cash in pig feed, and could retrieve it later as a larger lump sum, when they sold their pig. The pig almost acts as a kind of savings bank, with perhaps a little interest as well.

Table 8. Farmers' ranking of objectives in raising pigs in order of importance.

(percent of households)

	First choice			Second choice			Third choice		
Objective	S[1]	M[1]	L[1]	S	M	L	S	M	L
Steady income	15.9	16.4	60.0	3.2	0.0	0.0	0.0	0.0	0.0
Extra income	38.1	53.7	20.0	20.6	13.4	0.0	17.5	10.4	20.0
Saving cash	17.5	11.9	0.0	31.8	34.3	100.0	15.9	17.9	0.0
Use time	19.0	6.0	20.0	23.8	35.8	0.0	27.0	32.8	60.0
Elder's job	9.5	11.9	0.0	20.6	16.4	0.0	19.0	25.4	20.0
Total %	100	100	100	100	100	100	79.4	86.6	100

[1]S: small, M: medium, L: larger farms

Source: Formal survey, 1990

More than half the farmers of medium-scale farms chose "supportive income" as their top-ranking reason for raising pigs (54 percent). Secondary objectives given were "using free time" (36 percent) and "saving cash" (33 percent),

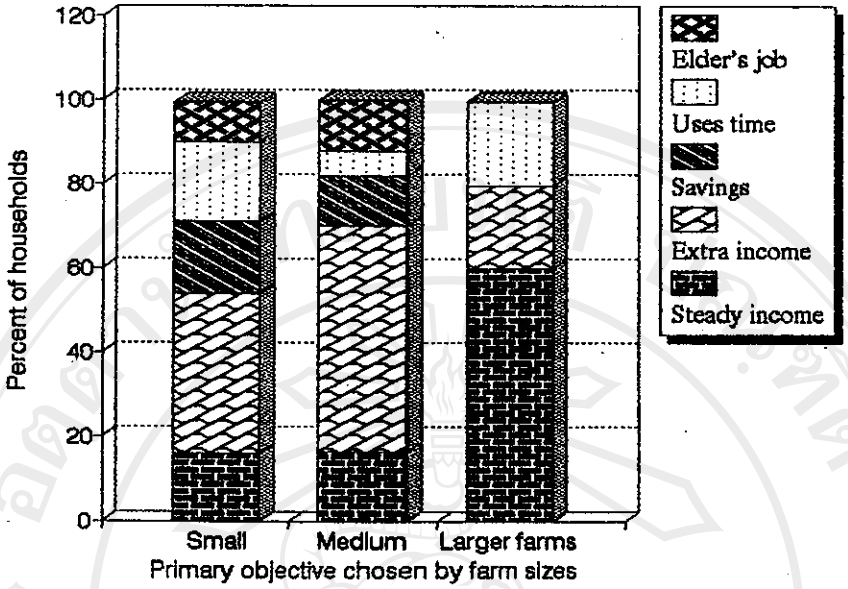

Figure 19. Farmers' primary objective in raising pigs.

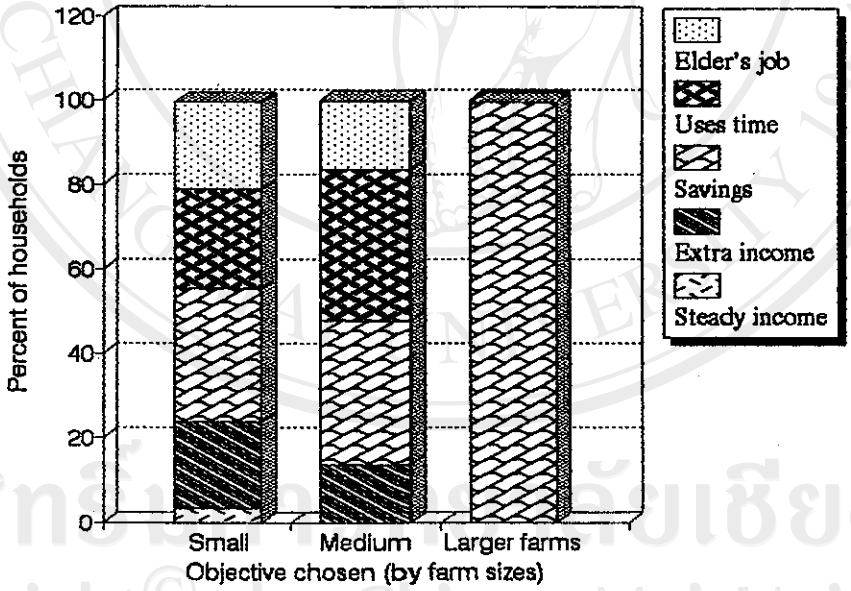

Figure 20. Farmers' secondary objective in raising pigs.

while the most frequent third-ranking objective was again "using free time" (33 percent), followed by "a job for elders" (25 percent) and "saving cash" (18 percent). It would therefore appear that these medium-scale farmers, like the small-scale farmers, raise pigs as primarily as a source of supportive income, with use of time and savings of cash considered important secondary objectives.

In contrast, larger-scale farmers frequently chose "main or continual income" as the most important reason motivating their pig-raising (60 percent), with a minority of farmers choosing "supportive income" and "use of free time" (20 percent each). The second most important objective was chosen unanimously as "saving cash", while the third-ranked choice was mostly "using free time" (60 percent), with "a job for elders" and "supportive income" selected by a few (20 percent each).

Although these larger-scale farmers receive major income from their agricultural activities, at the same time their higher economic standing allows them to raise many pigs continuously, which thus provides a more continual flow of income. The small and medium-scale farmers, however, have less ready cash to invest in buying piglets continually, and tend to raise fewer animals less

frequently. When pig prices are down they may abandon their pig production temporarily, until market prices go back up. Thus they perceive their pig-raising as primarily supportive and sporadic.

3.2 Farmers' knowledge

Farmers' knowledge of pig growth factors has an important influence on their management practices. Farmers were therefore asked to rank in order of importance the factors promoting good development in their pigs; their replies are presented in Table 9 and Figures 21-22. The factors presented were:

1. Good breed of pig.
2. Use of complete feed without additions.
3. Use of hog feed concentrate plus other foods, according to recommended formula.
4. Use of feed concentrate plus other foods, not according to recommended formula.
5. Provision of large quantity of food.

Complete feed is produced by feed companies as a ready-made feed not requiring the addition of other ingredients, and meeting the full nutritional needs of the pigs. Hog

feed concentrate is a concentrated form of nutrient supplement which must be combined with other foods such as rice by-products, vegetables, et cetera.

According to many pig farmers from small-scale farms, "good breed" is the most important factor, selected by 33 percent of farmers. "Complete feed" and "concentrate mixed not by formula" were also selected by farmers as the most important growth factor (27 and 25 percent respectively). Ranked second in importance for pig growth was "good breed", by as many as 42 percent of farmers. Various combinations of complete feed and feed concentrate were also put forward, but simply providing a large amount was rarely chosen.

Table 9. Farmers' ranking of pig growth factors in order of importance.

(percent of households)

	First choice			Second choice			Third choice		
Factor[1]	S[2]	M[2]	L[2]	S	M	L	S	M	L
Breed	33.3	28.4	20.0	42.9	44.8	80.0	0.0	0.0	0.0
Comp feed	27.0	20.9	20.0	14.3	16.4	0.0	1.6	0.0	0.0
Mix feed 1	14.3	13.4	20.0	17.5	6.0	20.0	3.2	3.0	0.0
Mix feed 2	25.4	35.8	40.0	17.5	14.9	0.0	1.6	1.5	0.0
More food	0.0	1.5	0.0	7.9	17.9	0.0	9.5	7.5	0.0
Total %	100	100	100	100	100	100	15.9	11.9	0.0

[1] Description of growth factors
Breed = quality of breed; Comp feed = use of complete feed;
Mix feed 1 = concentrate mixed by formula;
Mix feed 2 = concentrate mixed not by formula;
More food = give larger quantities of food.
[2] S = small; M = medium; L = larger farms.

Source: Formal survey, 1990.

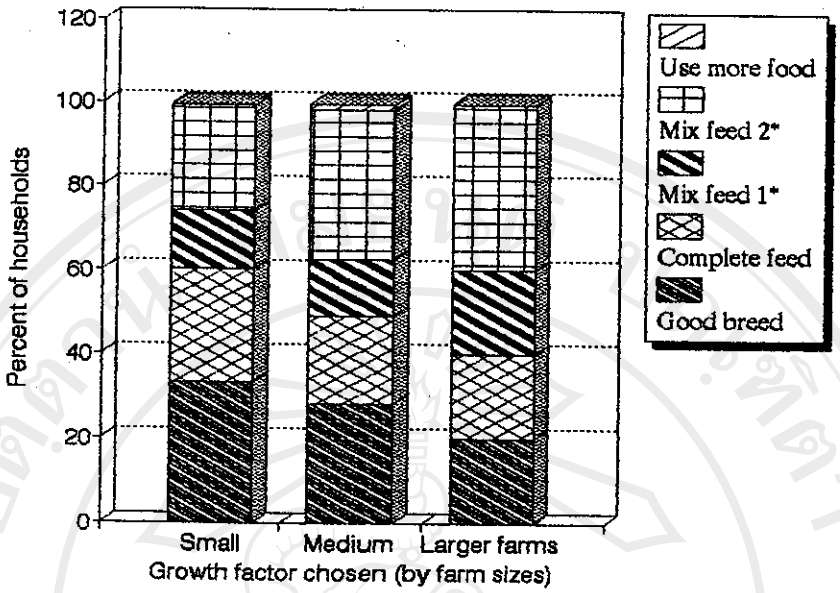

Figure 21. Farmers' choice of primary factor influencing pig growth.

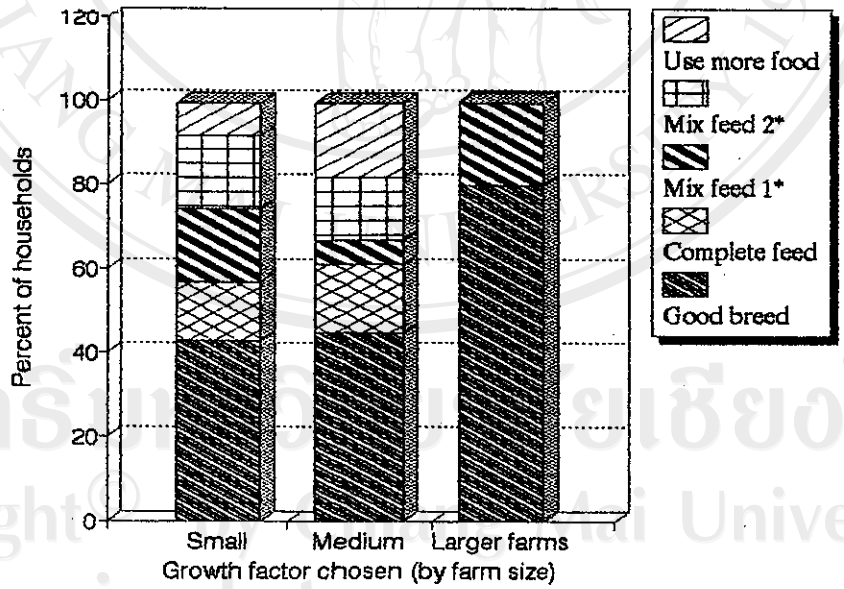

Figure 22. Farmers' choice of secondary factor influencing pig growth.

Medium-scale farmers favored using "concentrate mixed not by formula" (36 percent) as the most important growth factor, with a fair number selecting "good breed" (28 percent). "Good breed" was ranked as the second-most important growth factor by 45 percent of farmers; other farmers chose the food-related factors.

Larger-scale farmers also selected "concentrate not by formula" (40 percent) as the top-ranking growth factor, with equal numbers of individuals choosing between "good breed", "complete feed" and "concentrate mixed by formula" (20 percent each). For second most important growth factor, as much as 80 percent of farmers chose "good breed"; the other 20 percent chose "concentrate mixed by formula".

Whereas small-scale farmers appear to agree that "good breed" is the most important growth factor, with food-related factors trailing, medium-scale farmers emphasized use of feed concentrate, with "good breed" as a secondary factor. Larger-scale farmers responded similarly to the medium-scale farmers, likewise selecting feed concentrate, followed by breed. Interestingly, all farmers preferred mixing concentrated feed not in accordance with the recommended formula over following formula specifications. This may be because the formula requires using larger

amounts of concentrate, which is fairly expensive, whereas farmers tend to reduce the concentrate, and substitute the less expensive rice by-products instead. Small-scale farmers may want to minimize their feed costs, and larger-scale farmers, who have a large amount of rice by-products anyway, find it convenient and efficient to use those products instead of buying feed.

The source of farmers' rearing knowledge, which might be considered the basis for their management practices, can be the advice of neighbors, of piglet sellers and distributors, and of government extension officers. Interestingly, over 90 percent of small-scale farmers and 80 percent of medium-scale farmers rely upon their neighbors for information, while only 30 percent of larger-scale farmers do so. Instead, half of the larger-scale farmers develop their management skill from the advice of government officers, with the remaining 20 percent following the information of the piglet vendor (Table 10).

Table 10. Source of farmers' knowledge of rearing practices.

Source	Small farms	Medium farms	Larger farms
		(percents)	
Neighbors	90.4	80.5	30.0
Feed/piglet vendor	9.5	16.4	20.0
Govt officer	0.0	3.0	50.0

Source: Formal survey, 1990.

3.3 Perceived constraints

Farmers with different economic and agricultural resources naturally face slightly different constraints in their pig production. Survey results indicate that the majority of farmers from small and medium-scale farms consider the cost of feed to be the primary constraint in their feeding management (Table 11 and Figures 23-24). Other farmers in these groups cited the time required to travel in order to buy feed as their main constraint. The constraints ranked second in importance were lack of cash on hand, and the time and distance of travel.

Table 11. Farmers' perception and ranking of constraints in buying feed.

(percent)

Constraint	First choice			Second choice			Third choice		
	S*	M*	L*	S	M	L	S	M	L
Feed costly	68.3	59.7	30.0	19.0	19.4	0.0	0.0	0.0	0.0
Little cash	11.1	9.0	0.0	41.3	37.3	20.0	3.2	1.5	0.0
Low quality	0.0	0.0	0.0	3.2	3.0	0.0	3.2	0.0	0.0
Time & distance	20.6	31.3	70.0	36.5	40.3	10.0	19.0	14.9	0.0
Total %	100	100	100	100	100	30	25.4	16.4	0.0

*S= small; M= medium; L= larger farms

Source: Formal survey, 1991

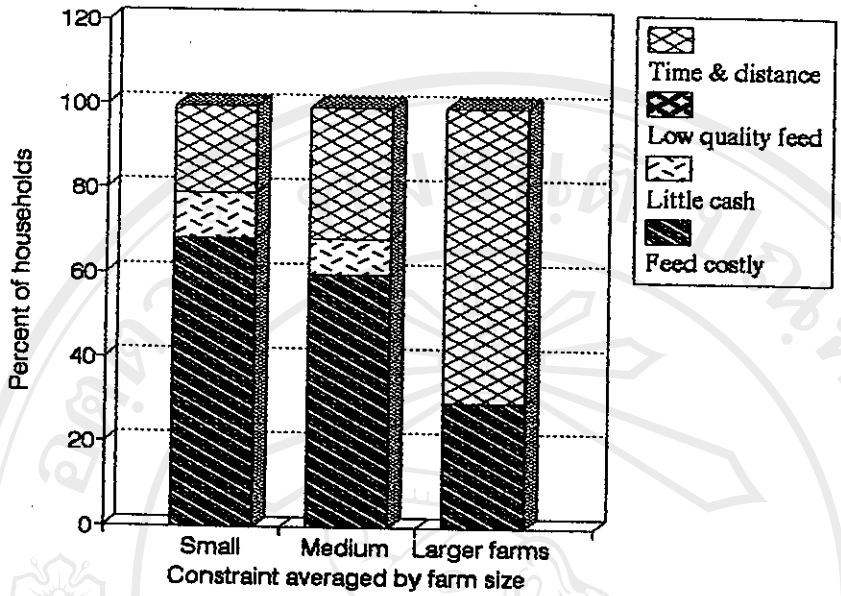

Figure 23. Farmers' primary constraint in buying feed.

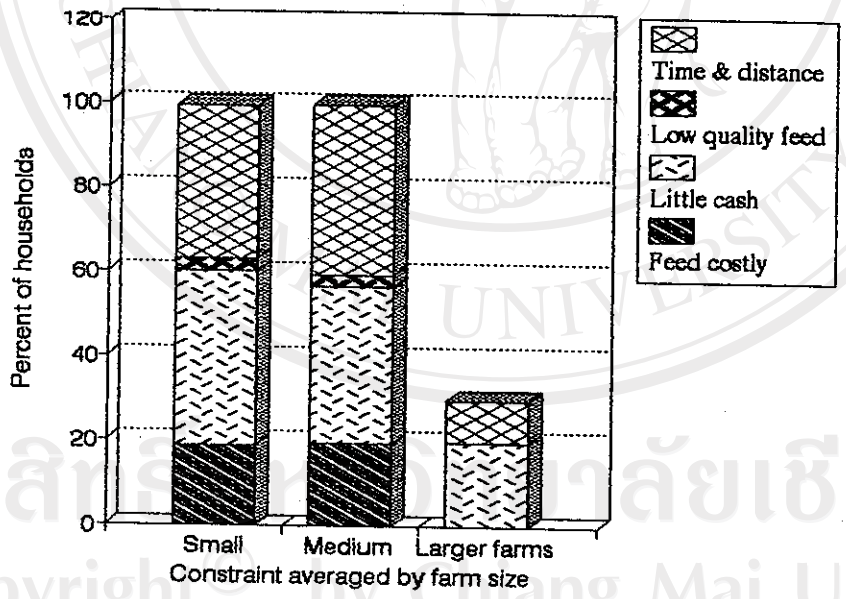

Figure 24. Farmers' secondary constraint in buying feed.

On the other hand, the majority of large farm-holders considered time of travel to be the greatest constraint (70 percent), with only 30 percent choosing feed expense. These farmers generally did not cite a secondary constraint to their feed management, but the 30 percent who did declared time and insufficient cash to be secondary problems.

These results indicate that the small and medium scale farmers must continually contend with their weaker economic resources. This requires them to minimize their expenditures, especially on feed, which can affect their pigs' growth and development, as will be discussed in a later chapter. The larger-scale farmers, however, must contend with limited time, which competes with the time that they need to spend working on their own farms. They may therefore want to minimize time spent on pig management activities such as cleaning and hygiene. Instead of buying feed often, they would be more likely to buy large amounts occasionally. Poor quality of bought feed was rarely mentioned by any of the farmers as a major constraint.

3.4 Criteria for sale

Farmers were asked to rank in importance the criteria they used for when to sell their pigs, as well as to cite

the reason they used in their most recent actual sale. Farmers were remarkably consistent amongst the three groups (Table 12, Figures 25-26). Large majorities cited the current market price of pigs as their main consideration: 70 percent of small-scale farmers, 66 percent of medium-scale farmers, and 60 percent of larger-scale farmers. Small and medium-scale farmers also cited need for cash as their most important criterion, but larger-scale farmers did not.

Table 12. Farmers' ranking of criteria for sale of pig, and actual criterion used most recently.

(percent)

	First choice			Second choice			Third choice			Actual reason		
Criterion	S[1]	M[1]	L[1]	S	M	L	S	M	L	S	M	L
Pig size	4.8	3.0	20.0	6.3	14.9	0.0	0.0	0.0	20.0	17.5	22.4	20.0
Pig age	12.7	13.4	20.0	38.1	29.9	60.0	4.8	7.5	0.0	0.0	0.0	0.0
Price[2]	69.8	65.7	60.0	20.6	25.4	20.0	4.8	4.5	0.0	82.5	77.6	80.0
Cash need	12.7	17.9	0.0	34.9	29.9	20.0	0.0	3.0	0.0	0.0	0.0	0.0
Total %	100	100	100	100	100	100	9.5	14.9	20.0	100	100	100

[1] S = small; M = medium; L = larger farms
[2] Price = current market price of pigs

Source: Formal survey, 1990.

The second-most important criterion was frequently the age of pig and need for cash according to small-scale farmers (37 and 32 percent of respondents). Medium-scale farmers named either of the two preceding reasons or else current market price (30, 29, and 24 percent of farmers). Larger-scale farmers most often chose pig age as the secondary criterion for sale (60 percent).

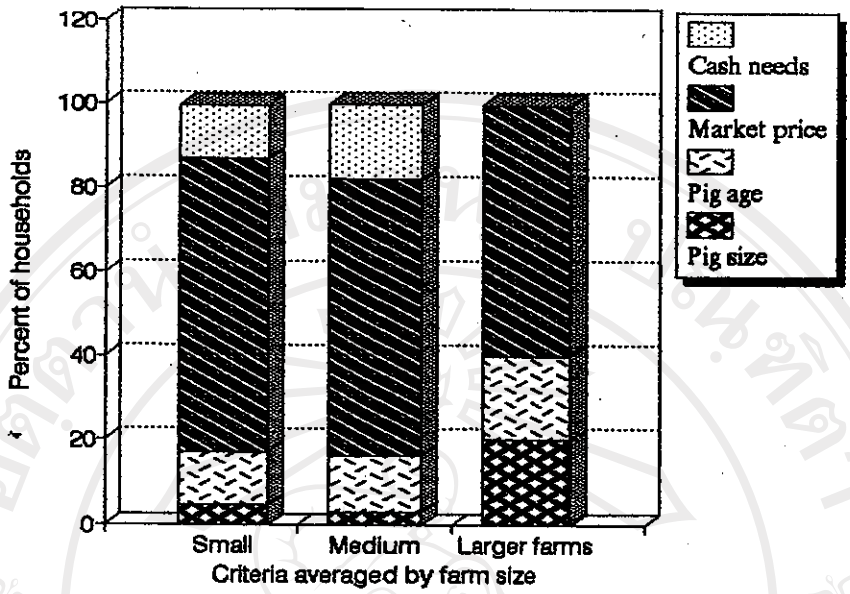

Figure 25. Farmers' primary criterion for sale of pig.

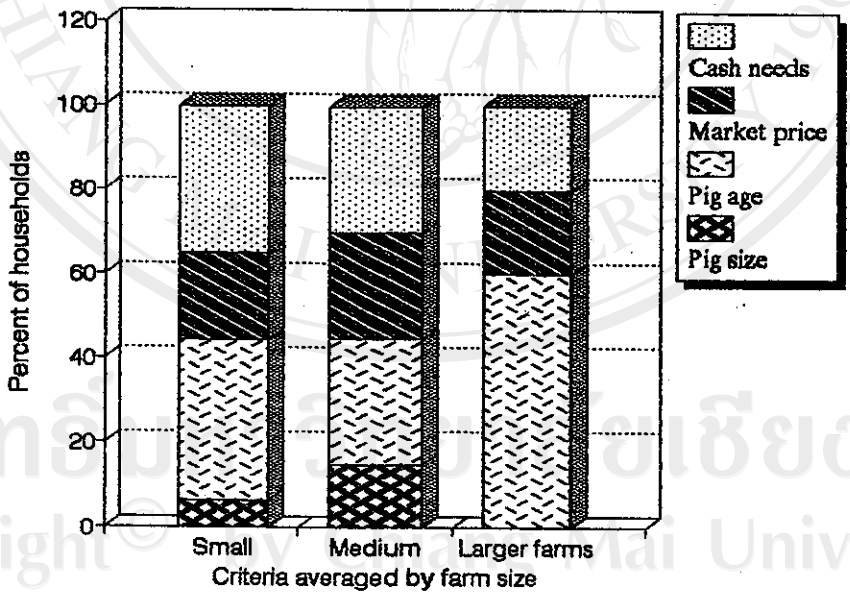

Figure 26. Farmers' secondary criterion for sale of pig.

Regarding what actual criterion they used in their most recent sale, the majority for all groups cited present market price of pigs (Figure 27). This would then seem to be the most reliable criterion and indicates the farmers' sensitivity to external market forces. However, regarding internal forces, such as the need and concern within the household, the smaller-scale farmers have indicated the importance of their need for cash. This reflects their overall objective in raising pigs as mentioned earlier: pigs can "store" money, until the farmer needs to "liquidate" them into cash.

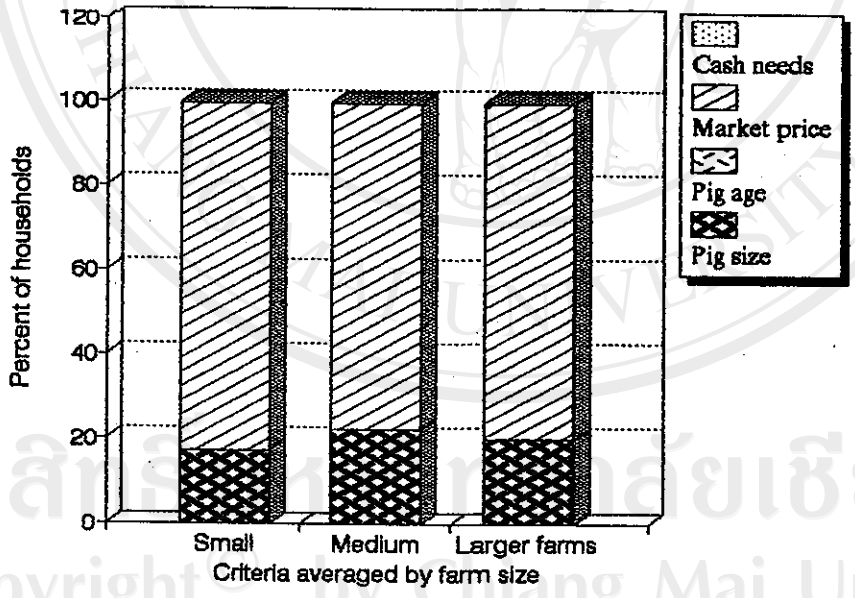

Figure 27. Farmers' actual reason for most recent sale of pig.

3.5 Attitude analysis

In order to assess the attitude of farmers towards backyard pig production, the quantitative technique of Likert's attitude measurement was used (Moser and Kalton, 1971). The technique involved asking each of the 33 participants to agree or disagree with 45 statements. Each statement is supposed to reflect the attitude being measured, and the participant's answer is graded quantitatively. For example, if a test statement indicates agreement with the attitude in question, the respondent will receive a '5' if she or he strongly agrees, or a '1' if she or he strongly disagrees. The scores for all the statements are summed to get the "total attitude score". This score represents how strongly the person holds the attitude being tested. In order to test the accuracy of each statement in measuring the overall attitude, the "Likert's criterion for internal consistency" is used (Fishbein and Ajzen, 1975). This involves calculating separate correlations of each statement score with the total attitude score (after subtracting the relevant statement score from the total). Only those statements with significant correlations are then used. In this case , the 21 statements with the highest correlation to total score were selected for analysis. Finally, the scores of different respondents were then

compared, and correlated with other quantitative variables to determine whether different groups of people responded differently regarding the attitude.

In this study, the attitude to be measured was the motivation of the farmer in pig-raising. Each statement was phrased to indicate either the presence or absence of a profit-oriented, semi-commercial attitude towards pig-production. Thus, some statements represented the viewpoint of the backyard producer who is raising pigs to save cash or make use of extra time, in other words, who is not ambitious towards making large profits or expecting to make high economic success. Other statements reflect more profit-orientation or nearly commercial-scale of concerns. Respondents were asked to disagree or agree on a scale of 1 to 5 (with 1 indicating strong disagreement, 3 neutral response, and 5 strong agreement). Questions were phrased both positively and negatively, and agreement with some meant high profit-orientation, while agreement with others meant low profit-concerns. With 21 questions, the lowest score possible was 21, and the highest score possible 105. The test statements were graded so that a low total score indicates non-profit orientation (and more agreement with low-scale saving cash or using free time reasons, especially social reasons), whereas high scores indicate a motivating

attitude of large scale, high profit orientation. The attitude survey is provided in Appendix F.

The results from the attitude test was a bimodal distribution of respondents' total scores. The first mode had a mean of 34.7, and included 25 of the respondents. This suggests that this group of farmers shared an attitude of low-profit orientation in their style of pig-raising. The second mode had a mean of 88.4, and included the remaining 8 respondents. These respondents can be said to share strong profit-motivation. Figure 28 illustrates the distribution of respondents' total scores, showing the two separate modes. Figure 29 compares the actual distribution with two theoretical distributions: a normal distribution with mean of 63 (indicating a primarily neutral response, with equal minorities showing more and less of the large profit motive), and an even distribution, with exactly equal numbers of farmers equally spread out over all possible total scores.

A Chi-square test for independence of distributions proved that the actual distribution was indeed significantly different than a distribution normally spread around the neutral mean of 63 ($p=0.0019$), and also significantly different from the expected values of an even distribution,

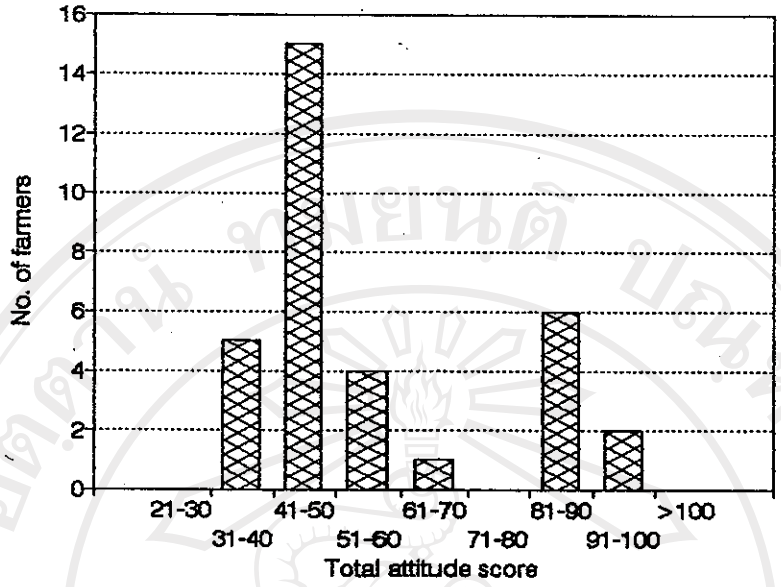

Figure 28. Distribution of farmers' attitude scores.

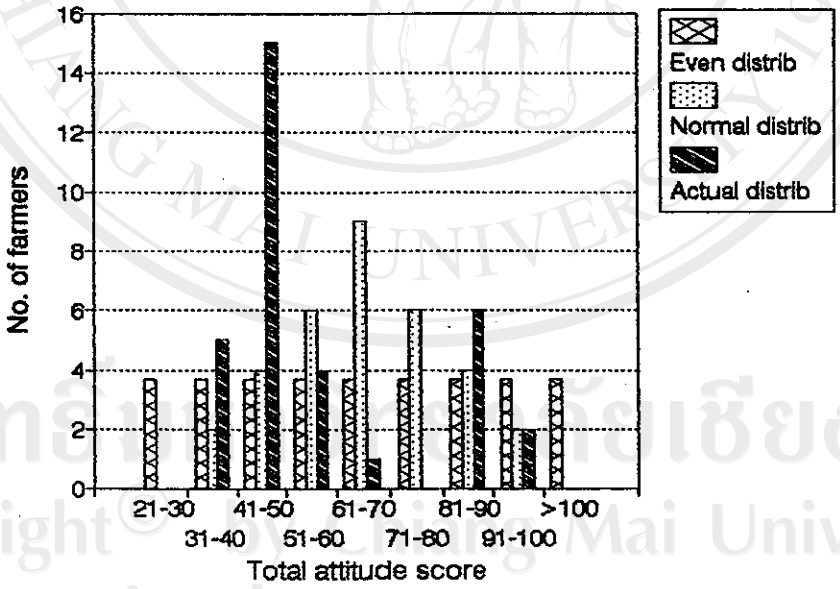

Figure 29. Actual and theoretical distributions of attitude scores.

which would have indicated no trend in attitude amongst the farmers (p=0.0127). The frequency distributions and results of the Chi-square tests are provided in Table 13.

Table 13. Frequency distribution of farmers' attitude scores, and comparison with theoretical distributions.

a. Attitude scores under 3 distributions[1]

Score range	Actual distrib	Normal distrib	Even distrib
21-30	0	0	3.67
31-40	5	2	3.67
41-50	15	4	3.67
51-60	4	6	3.67
61-70	1	9	3.67
71-80	0	6	3.67
81-90	6	4	3.67
91-100	2	2	3.67
>100	0	0	3.67

b. Results of Chi-square test for independence of actual distribution from other distributions

Distribution tested	Chi-square	p-value
Normal	20.85	0.0019
Even	19.44	0.0127

[1] Figures are numbers of farmers receiving an attitude score in the given range. Theoretical distributions are the normal (x=63) and the even distributions.

Source: Attitude test, 1990.

The final step of attitude analysis is to test the validity of the attitude scale. This is commonly done by correlating the total scores with some other indicator variable, such as economic resource or social class. Since this study tested the profit-motivation of pig farmers (and

the commercial scale of their orientation), their total scores were checked by correlation with several economic variables: cash costs per pig, cash revenues per pig, cash costs for the entire herd (raised by each household), and cash revenues per herd. Net benefits were also tested. Since attitude scores were ordinal, Spearman's rank correlation was used.

As summarized in Table 14 and detailed in Appendix G, total attitude scores were significantly and positively correlated with all gross cash costs and gross cash benefits. This means that those farmers with low total scores and low profit orientation in their attitude, were also the farmers operating on a low scale: lower cash output and lower cash revenues. Those with high scores (and high profit orientation) were the farmers with higher expenditures and high income from their pig production enterprise.

The correlation becomes extremely significant statistically when the gross expense and income is calculated on a herd basis. This can be easily understood because those 8 farmers with high profit orientation also raise many pigs: their attitude scores of over 80 (out of a possible 105) were matched by their cash revenues from their

herds of a minimum of 6,500 Baht, some over 15,000 Baht, and up to 31,000 Baht. In contrast, the lower scoring farmers had low herd revenues of 1,500 to 4,900 Baht, with just one farmer getting 9,000 Baht. The correlation can be said to "validate" the attitude test.

Table 14. Results of Spearman's rank correlation test on attitude scores and various economic parameters.

Economic parameter	Spearman's r	t-stat	p-value
Cash cost/pig	0.4183	2.564	0.016
Cash income/pig	0.4969	3.188	0.007
Cash cost/herd	0.7853	7.062	0.000
Cash income/herd	0.7853	7.062	0.000
Net benefit/herd	0.2515	1.447	ns
Net cash benefit/herd	0.2921	1.701	0.099

Source: Analysis of attitude test, 1990.

Interestingly, the correlation between total attitude scores and net benefit per herd was not significant, and that with net cash benefit per herd was just barely statistically significant (p=0.099). So although the farmers' attitudes towards the economic reasons for raising pigs correlate very well with their actual cash output and income, their attitudes do not correlate quite as well with the actual profits (net benefits) which they achieve. This can be explained because the actual net profits are not so different at this overall backyard scale of production. Some farmers may indeed have relatively higher revenues from

their pigs, but their expenses are also larger, since they raise many pigs, and their scale of production may be described as semi-commercial; but since they are not truly commercial farmers, and still belong to the backyard group, their net benefits are still limited, just a bit more than the "low-profit oriented" farmers.

The conclusion from the attitude test is that a majority of the study farmers hold the attitude of low-profit concern applied to their pig-production. The test quantitatively measures the attitude, which also emerged from formal survey interviews presented earlier in the chapter. These results are very important to understanding why backyard pig farmers raise pigs, especially when so many studies have suggested that the scale of their enterprise is not economically as efficient as commercial pig-farmers. The information from interviews and the attitude test would indicate that the majority who formed the "low-profit oriented group" are not so concerned with high economic profits, and are more importantly motivated by a more relaxed and low-scale approach to the activity: by investing a little extra cash, they can save that cash from unncessary expenses, make use of available free time, and get back that amount of cash with some "interest" at the time of sale. Even if they break even, at this scale and

for these purposes, they have still successfully "saved" the money from disappearing, and they are generally satisfied. Only if they actually lose money, usually because market prices have dropped, do they then stop raising pigs for awhile. But they do not give up entirely: whenever the market looks better, they may begin again, by buying just a couple piglets. In this small way, they can make a difference in their households' functioning, and have a successful minor strategy for budgeting themselves and their families' needs. The second group strives more directly for better profits, and invests more money in their management practices. Within the backyard system, this second group can be considered tending towards "semi-commercial" orientation, both in attitude and practice.