Farmers' Motivation in Partnership Farming System of Broiler Industry in GERBANGKERTASUSILA, East Java, Indonesia

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Abstract

A study was done to study the motivation of broiler farmers to join contract farming system and to examine the internal factors which influenced the successful of their broiler industry. The study was done by survey method in 7 districts of East Java, Indonesia which are well none as GERBANGKERTASUSILA (acronym from Gresik, Bangkalan, Mojokerto, Surabaya, Sidoarjo and Lamongan). Eighty nine (89) plasma farmers who experienced with at least 2 contract systems were taken from 810 population members with simple random sampling method. The data collected included the farmer's characteristics, farmer's involvement in contract farming system, and farmer's motivation. The results showed that most of plasma farmers at Gerbangkertasusila joined the contract farming as the main source of income either as entrepreneurs or farmers, they are at productive age, well educated (at least graduated from high school). They were 4 contract systems practiced, namely: management, poultry shop, labor and profit sharing contract systems. Most of plasma famers (60%) in Gerbangkertasulia experienced with 2 contract systems, only 10% experienced with 4 contract system. The most preferred contract system was the management contract system with the motivation for decreasing business risk and incentive criteria.

Key words: contract farming, poultry industry, plasma farmers, Analytical Hierarchy Process

1. Introduction

Broiler industry is one of the most important sources for providing meat requirement in Indonesia. In 2005, broiler production contributed up to 49.97% of total meat Indonesian production (Ditjen Peternakan 2011). However, the growth of broiler industry in Indonesia was very fluctuating. In 1993 – 1997 the annual growth of broiler industry was 5.86 % (Ditjen Peternakan, 2005), but it drastically decreased for the following year. Although the meat production was still less than meat requirement, even increased continuously, the broiler population in the year 1998 was only 20 % of the previous year (Saragih, 2001). Surely, this fantastic decrease was due to the monetary crisis of 1998, but this phenomenon also indicated that poultry industry in Indonesia has no endurance and very vulnerable to external condition changes. Looking the important of broiler industry in Indonesian economic, it is important to understand the reasons behind this phenomenon.

By the end of 1998 most Indonesian broiler farmers changed from an independent farming system to be contract farming, or in Indonesia is well known as the *"Partnership Farming"* system (Suharno, 2002). Now this partnership farming system, with its success or fail story, is still survive and have made broiler industry growing rapidly. Although the outbreak of bird flu in 2003 made a lot broiler farmers getting vanished, the statistical data show that since 2005 the broiler production reached of about 49.97% of total meet Indonesian production (Ditjen Peternakan 2011). Looking this figure, one could come to the conclusion that "Partnership farming" system has a good prospect, both for increasing broiler industry and farmers' income and welfare. However, the reality told different story. Indeed, the poultry industry had developed very fantastically, however the poultry farmers' condition is still far from being a "wellbeing farmers".

The contract farming system in Indonesia is called also as "Partnership farming system" which is done by "Core - plasma" relationship. In this system, the "big" broiler company acts as the "core", and poultry farmer acts as the "plasma". The core company provides: (i) Day old Chicken (DOC) and *sapronak* (acronym of Indonesian terms of *"sarana produksi ternak"*, which could be translate to "production utilities" such as feeds, medicine and vitamin), (ii) technical assistance, (iv) and market for the product (broiler). The plasma provides land chicken cage, and labors.

In summary, the factors that encourage the core company to do partnership farming are: (i) to get the workers, (ii) to get the broiler cage (iii) increase the company benefit by increasing of selling DOC and sapronak, and (iv) the sales turnover. With this system, actually poultry farmer also gain a lot advantages, because by getting DOC and *sapronak*, farming capital and technical assistance from the company core they could do their business with

less farming capital. In addition the core company guarantees the market for the broiler product, and therefore will minimize the risk for price fluctuation.

In contract farming system, the bussines would beneficial to both parties if the company and the farmers fully agree and well support the agreement. However, because of different needs, there were a lot of possibility to be deviations in the application of the contract (Eaton and shepherd, 2001). Roth (1992) found some distortions in contract farming i.e.: inputs manipulations, improfitable contract, under weighing of poultry, grading problems. Sigit *et al.* (2004) observed that the price of inputs (DOC, feeds, medicine and vitamin) and output (broiler) was often determined by the company with no transparency. In addition, the plasma could not evaluate or controlled the quality of the inputs given by the core. Because of their lower bargaining position, farmer could do nothing. Therefore, the partnership farming which is expected to yield a profit to both parties, was often detrimental to plasma farmers (Sumartini, 2004). Eaton dan Shepherd (2001) observed that physically farmers agree with the agreement, however then they thought that the contract was unprofitable to them, then they did not applied the proper technology production in their farm. This would merugikan both parties. The company lost because of getting unqualified chicken meet, and farmers lost because of getting less meet and low price. For long term this unhealthy condition would make the broiler industry colaps.

Theoritically humman behaviour reflects their needs. If they think that the condition agree with their needs, there will be a positive reaction *a*nd well support the contract system (Dewanto, 2005). In the other hand, if there the condition is not meet their needs, there will a negative reaction. This theory probably could explain the up and down of broiler industry in Indonesia with contract farming system. It is often that the deviations to the contract is not intentional, either by the core company and the plasma farmers. They had to deviate from the contract due to the problems that causing them to be losing about. The problems faced by the core company include: (i) price fluctuation of the broiler. (ii) price fluctuation of *sapronak*, (iii) bad management of the plasma farmers, (iv) lack of field controll, (v) the occurence of broiler deseases. The problems faced by the plasma farmers which could make they did not obey the contract includes: (i) the contract is often disadvantage to plasma farmers, (ii) the plasma famers used only as the worker, (iii) te quality of *sapronak* given by the company is not standard, (iv) the poultry industry is practiced only as a side business, and (v) the management is bad.

The study reported here was aimed to examine the motivation the plasma farmes decicisson in their contract farming practices. The study was also examined the internal condition of the plasma farmers which influenced the succesfull of the broiler industry. It was expected that the findings could be used to minimize the negative side of contract farming in broiler industry, and hence it would promote the broiler industry in Indonesia.

2. Methods

The study was done in the district of Gresik, Bangkalan, Mojokerto, Surabaya, Sidoarjo and Lamongan, whcih then was shortened as the "Gerbangkertosulio" District. These districts are known as the major poduction of poultry industries in East Java; the data of East Java Statistical Bureau (Dinas Peternakan Prov. Jatim 2011) showed that these districs constributed 52.7% of total East Java broiler production. The field work was done from October to December 2012.

The samples were collected by the simple random sampling method. The farmes selected for the samples were the farmers who have practiced at least 2 contarct farming systems with poultry population of more than 5000 broilers. The number of samples were determined based on the metdod of Sevilla *et al.* (1993), i.e.

$$n = \frac{N}{N(d)^2 + 1}$$

In which: *n* is the number of samples; *N* is the number of population, and *d* is the determined accuracy (10%) based on the characteristics deviation from the population.

The preliminary observation showed that in 2012 there were 809 broiler farmers meet the requirements described above (had at least 5000 broilers with the experience of at least 2 contract system). Therefore the number of samples used in this study were 89 broiler farmers.

The primary data were collected by direct observation with the help of closed quistionnaire. The data collected were: the characteristics of plasma farmers, partnership farming system, and motivation of the plasma farmers to join the partnership farming. The characteristics data of plasma farmers collected were that of thought influenced the succesfull of the farming, i.e.: farmer's ages, education, main job and the experiences in broiler industry. To make easy the study, the farmer's motivation was grouped in motivation of: Employement oportunity (EO), income safety (IS), contract price (CP), risk minimization (RM), technology access (TA), market information (MI); capital access (CA), getting incentive (GI), market price (MP), increasing

competitiveness (IC), and farming sustainability (FS).

The data were analysed by the Analytical Hierarchy Process (AHP) developed by Saaty (1980; 2008), with the help of a Expet Choice V. 9. sofware. It is important to point out that AHP is not intended to develop a "correct" decision, but it decision makers find one that best suits their goal and their understanding of the problem. The AHP provides a comprehensive and rational framework for structuring a decision problem, for representing and quantifying its elements, for relating those elements to overall goals, and for evaluating alternative solutions. To do AHP, first the users decompose their decision problem into a hierarchy of more easily comprehended sub-problems. Each of sub-problem can be analyzed independently. The elements of the hierarchy can relate to any aspect of the decision problem, either tangible or intangible, anything at all that applies to the decision at hand. It might be well- or poorly-understood, and it could be carefully measured or roughly estimated. After building the hierarchy, the decision makers evaluate its various elements by comparing them to one another two at a time, with respect to their impact on an element above them in the hierarchy. In conducting the comparisons, the decision makers could use the concrete data about the elements, or use their judgments about the elements' relative meaning and importance. In performing the evaluations, the human judgments is very important, thus it is not merely based on the information. Since its formulation, the AHP had been used extensively in various of fields (Bourgeois, 2005)

3. Results and Discussion

The study results showed that the farmers who join the partnership farming, which then called as the "plasma farmers" had a wide variability in their characteristics, especially in term of their age, education, occupation (Table 1); farming experience and the number of contract system (Table 2).

Table 1. The characteristics of contract farmers in the district of GERBANGKERTASUSILA

Characteristics of the respondents	Criteria	Proportion from the population (%)
Farmers' ages	Productive	90
	Non productive	10
Farmers education	Primary school	10
	Junior high school	15
	Senior high school	50
	University	25
Primary occupation	Entrepreneur	45
	Farmers	17
	Civil servants	29
	Other	9

The criteria of productive and non productive ages presented in Table 1 were based on the classification of Labor Law No. 13 of 2003, i.e. 15-64 years as for the productive ages; less than 15 years old and more that 64 years old as the non productive age . According to Hartanto (2005) at the ages of 15-64 years old people were able to do an efficient productive work and willing to accept any innovation. The data presented in Table 1, show that most of broiler farmers in GERBANG KERTASUSILA were on their productive ages, only a small number (10%) were categorized as the non productive plasma farmers. Discussion with the non productive age farmers, they said that for them, farming chicken poultry was not merely for income generation, but looking for activities in the rest of their life.

The results in Table 1 also show that the background education of the plasma farmers in GERBANGKERTASUSIILA are evenly distributed form primary school to the universities. It was interesting to notice that more than 50% of plasma famers have education back ground of high school and university levels, and only 10% have education background of primary school. The education background would influence the behavior of farmers, especially in receiving any innovation (D'Silva, 2009). The better is the education background the easier for them to receive any new technology and/or innovation.

It is interesting to relate farmers' age and farmers' education background. Although the farmers who had primary school education background was about the same with the number of plasma farmers that are categorized as the unproductive ages, there was no relationship between farmers age and education background. Most of unproductive age farmers were retirees who looking activities in the rest of their life, and most of them graduated from high school and university.

Most of plasma farmers practice their farming as the primary source of their income, both who have profession as entrepreneur (45%) and as farmers (17 %). There were 29% of plasma farmers (see Table 1) who have the primary occupation as the civil servants. Most of them are retirements who want to have activities in the rest of their life, but some of them are still active as the civil servant with the aim of getting an additional income.

It was observed that there were 4 types of contract systems in broiler industry in GERBANGKERTASUSILA. These are: (i) management contract system, (ii) poultry shop, (iii) labor contract system, and (iv) profit sharing contract system. By management contract system the company as the nucleus provides all the necessities for broiler industry (which include DOC and *Sapronak*) and technical assistance, and the plasma farmers provide broiler cage, equipment, labor and operational cost. In this system the plasma farmers sell their product (broiler) to the core company with the price that had been set out in the agreement. If the farmers have a good performance in their broiler production, they will get an incentive.

The poultry shop contract farming system is a combination of general trade and agency. In this system plasma farmers acquire the *sapronak* from the nucleus with fixed priced, and the plasma farmers free to sell their broiler anywhere at the marked price. In labor contract system, all the requirements of broiler production were provided by the company nucleus, and the plasma was paid for their labor that based on the number of Day old chicken (DOC). The plasma farmers will also get an incentive if they have satisfactory achievements in their broiler production. In the profit sharing contract system the plasma farmers obtain their capital and *sapronak* from company nucleus, but with the *sapronak* price as the market price. The plasma provide broiler cage, equipments, and labor. The plasma farmers free to decide when and where they sell the product (broiler), then the profits is divided according to the capital sharing of each party.

The result presented in Table 2 shows that only 10% of the respondents experienced with 4 contract systems. Most of plasma farmers (60%) only experience with 2 contract systems The result presented in Table 2 indicates that there was no relationship between plasma farmers' experiences and the changes of contract system. Most of the respondent (80%) had experience in broiler industry of more than 3 years, only 20% of plasma farmers had experience in poultry industry less than 3 years.

Table 2 . The experiences of plasma farmers in broiler industry and practicing the contract systems

Farmers' experiences in broiler industry	Proportion of plasma farmers (%)	Contract farming system practiced by plasma famers	Proportion of plasma farmers (%)
< 3 years	20	2 contact systems	60
3 – 6 years	45	3 contract systems	30
>6 years	35	4 contract systems	10

The variability in plasma characteristics would influence their attitude to the contract system. If the plasma satisfy with the contract system, and the service of the company, they would loyal to the company and hence they would endure to keep working with the core company, otherwise they would move to other company, or at least change their contract system. The reasons for changes the contract systems were: (1) did not satisfy with the contract system or services of the core company, (ii) to obtain a more advantage contract system or a better core company, and (iii) to have an experience the another contract system. It seems that the most of plasma farmers happy with their second choices, so they did not change to other contract systems.

The result of Analytical Hierarchy Process is presented in Table 3 for explaining the criteria of plasma farmers to do contact farming, and in Table 4 for the preference of contract farming systems. The result presented in Table 3 shows that there are 3 important criteria used for plasma farmers' consideration to do partnership farming, i.e. (i) Source of income with the value of 0.12, and then followed by minimizing the risk (0.11), and capital access (0.11). It has been shown (Table 1) that the main occupation of the plasma farmers in GERBANGKERTASUSILA are entrepreneur and farmer, hence source of income is the most important consideration for practicing the partnership farming.

Broiler industry in Indonesia is high business risk and difficult to make fore casting. The factors responsible for these phenomena are: (i) uncontrolled environment condition, (ii) uncontrolled market fluctuation, (iii) labor skill dependence. In addition, broiler industry system in Indonesia is likely fully controlled by the big companies because these big companies do all chain activities, from DOC producer, *sapronak* supply to meat processing (Sumartini, 2004). Therefore it is reasonable that minimizing the risk is one of the most important factors considered by the plasma farmers. Capital access was also an important criterion considered by plasma farmers in GERBANGKERTASUSILA, because most of these farmers have a limited capital. Incentive criterion and improving competitiveness were the lowest consideration for the plasma farmers in GERBANGKERTASUSILA. The both criteria had a value of 0.80.

Table 3. Matrix comparison of the plasma farmers' criteria for joining partnership farming

Criteria	EO	IS	CP	MR	TA	MI	CA	GI	MP	IC	FS	Total	Weight
Employment opurtunity (Eo)	-	1.0	0.9	1.1	1.2	0.9	0.8	1.2	1.0	1.2	0.9	10.2	0.09
Source of income (IS)	1.0	-	1.4	1.2	1.4	1.3	1.0	1.5	1.4	1.5	1.3	13,0	0.12
Contract price (CP)	1.1	0.6	-	1.0	1.3	1.2	1.0	1.3	1.2	1.3	1.3	11.3	0.10
Minimizing the risk (MR)	0.9	0.8	1.0	-	1.5	1.1	1.1	1.5	1.3	1.5	1.2	11.9	0.11
Technology access (TA)	0.8	0.6	0.7	0.5	-	0.9	0.9	1.3	1.0	0.9	1.0	8.6	0.08
Market Information (MI)	1.1	0.7	0.8	0.9	1.1	-	0.9	1.2	1.1	1.2	1.1	10.1	0.09
Capital access (CA)	1.2	1.0	1.0	0.9	1.1	1.1	-	1.6	1.3	1.5	1.3	12,0	0.11
Getting incentive (GI)	0.8	0.5	0.7	0.5	0.7	0.8	0.4	-	1.0	1.0	1.1	7.5	0.07
Market price (MP) Increasing	1.0	0.6	0.8	0.7	1.0	0.9	0.7	1.0	-	1.3	1.1	9.1	0.08
Competitiveness(IC) Farming	0.8	0.5	0.7	0.5	1.1	0.8	0.5	1.0	0.7	-	1.3	7.9	0.07
Sustainability (FS)	1.1	0.7	0.7	0.8	1.0	0.9	0.7	0.9	0.9	0.7	-	8.4	0.08

The compilation of AHP synthesis presented in Table 4 shows from all aspects of criteria employed in this study, management contract was the first preferred contract system (with the priority value of 0.31) by plasma farmers in GERBANGKERTASUSILA. Except for source of income, market price, and market information criteria, management contract system possess the highest value AHP synthesis. In contract management system plasma farmers obtain DOC and *sapronak* from the core company with the fixed price. They also sell their product to the core company. Both the price of the *sapronak* and the broiler had been set up in the contract, so that the farmers did not necessary to search out market information.

From point view of source of income, poultry shop contract system was probably would yield more profit (the AHP value of 0.33). However, for plasma farmers in GERBANGKERTASUSILA, it seems that income safety was more important rather than the profit of the business. Probably management contract system yield a less profit compare to poultry shop, but this system has less risk so that the income can be assured.

Table 4. AHP synthesis of the criteria and contract system of partnership farming in GERBANGKERTASUSILA

Synthesis		Management contract	Poultry shop	Labor contract	Profit sharing
Employment opurtunity (Eo)	0.09	0.32	0.28	0.18	0.23
Source of Income (IS)	0.12	0.29	0.33	0.17	0.22
Contract price (CP)	0.10	0.31	0.27	0.16	0.27
Minimizing the risk (MR)	0.11	0.36	0.28	0.15	0.21
Technology access (TA)	0.08	0.33	0.29	0.15	0.23
Market Information (MI)	0.09	0.28	0.30	0.15	0.28
Capital access (CA)	0.11	0.32	0.28	0.18	0.22
Getting incentive (GI)	0.07	0.36	0.28	0.18	0.19
Market price (MP) Increasing	0.08	0.28	0.30	0.18	0.25
Competitiveness(IC) Farming	0.07	0.31	0.29	0.15	0.25
Sustainability (FS)	0.08	0.31	0.29	0.15	0.25
Priorty		0.31	0.29	0.16	0.24

Labor contract is the most least preferred contract system with AHP synthesis of 0.19. In this contract system plasma farmers only act as the labor, the did not have a freddom to do with their broiler. They did not enjoy this treatment. Although the bussiness might had a high profit the farmers did not enjoy the profit. Indeed they got also an incentive, but the incentive did not propotional with the profit. In addition, as free persons, the farmers also have a pride and a willingness to be acknowledge as "the humman" not only as a labor.

4. Conclussion

The results of the study discussed in this manuscript show that most of broiler farmers (90%) in GERBANGKERTASUSILA are in productive age (15-64 years old), well educated (graduated from at least senior high school). They do broiler farming as the main source of income both as enterpreuner and farmer. Most of the respondents have an experience of broiler farming of more than 6 years, but most of them only experienced with 2 contract system, This indicated that they satisfy with second choice. The most preffered contract system is management contract system. Although from profit point of view management contract system was less profitable than poultry shop, contract management has a less bussiness risk so that the income can be assured.

Acknowledgement

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