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Farmers' Perception Towards Black Head Ettawa Crossbred Goat in Kaligesing, Purworejo, Indonesia

Budi Guntoro, Fajar Aji Baskoro and Gede Suparta Budisatri
Faculty of Animal Science, Universitas Gadjah Mada, Jl. Fauna 3, Bulaksumur,
55281 Yogyakarta, Indonesia

Abstract: The aims of the research were to analyse the farmers perception of black head Ettawa crossbred goat in Kaligesing and the factors wich influenced farmers perception of black head Etawa goat in Kaligesing. This research tool used questionnaires and survey methods. Data were collected by distributing 100 questionnaires with interviewed to 100 respondents into 3 different strata areas, the areas is Pandanrejo (upland Kaligesing), Tlogoguo (center Kaligesing), Kaligono (lowland Kaligesing). The farmers perception of black head Ettawa crossbred goat in Kaligesing achieved 68% that means black head Ettawa crossbred goat preffered by farmers in Kaligesing. The results of this research showed that age was significant ($p<0.05$), experience was very significant ($p<0.01$), income was significant ($p<0.05$), gender was significant ($p<0.05$) and education was not significant ($p>0.05$) to the farmer's perception towards black head Ettawa crossbred goat. While, education was not influenced farmers perception of black head Ettawa crossbred goat in Kaligesing. The results which were obtained indicating R^2 of equation $Y = 80.952-0.489X1-0.576X2+0.786X3+0.005X4+0.005X5$ was 0.28.2 that means 28.2% farmers perception could be explained by those variables in the regression equation while 71.8% explained by other factors beyond this study.

Key words: Perception, farmers, black head ettawa crossbred goat, Kaligesing, Indonesia

INTRODUCTION

In many developing countries, rapidly emerging urban demand for livestock products presents an eneormous opportunity for domestic agriculture but there is also serious risk that smallholder rural majorities will miss this and be marginalized by agrifood industrialization. The contribution of goat to the nutritional and economic wellbeing of minkind is tremendous in many parts of the world, notably in the mediterranean countries and in the Middle East (Juarez and Ramos, 1986; Park, 1994). Goat meat production represents 10.8 and 7.3% of the world ruminant's meat production, respectively with 64 and 90% of that being produced in Asia and Africa (Zervas and Tsiplakou, 2011). Of the 800 million or so goats in the world today, only about 9% is housed (Alvarez and Gutierrez, 2010). Although, like cattle and sheep they are highly gregarious and therefore stressed by isolation, they are more likely to be aggressive than sheep and less likely to flee in the presence of a perceived aggressor. Aggression is particularly common at the feeding troughs and enriching a feedlot will reduce the aggression and increase weight gain (Flint and Murray, 2001). However, goat behaviour is different to that of the other major domesticated ruminan species, sheep and cattle (Miranda-de la Lama and Mattiello, 2010).

Ettawa crossbred goat is the result of crosses which are not focused and less patterned between Ettawa goats from India and Indonesia native goat. Characteristics of Ettawa crossbred goat that was initially assumed to be between the two goat parents but further development of performance is closer toward the Ettawa than the native goat. Other characteristics, according Hardjosubroto in 1994 is a black stripes, red, brown and sometimes white fury, convex face and long drooped-down ears. The goats' wattle was large enough and the lower jaw is more prominent than the upper. National standardization agency has classified goat into general and special specifications. General specifications fulfill the phenotypically quality standards including: long ears, there is a combination of colors (white-black or white-brown), hanging limp fur. While the special specifications are healthy and free from contagious animal diseases declared by the competent authorities, no physical defects, free of defects for reproduction have no the pedigree breeds that are genetically defective. National Standardization Agency (BSN) divides quality

Corresponding Author: Budi Guntoro, Faculty of Animal Science, Universitas Gadjah Mada, Jl. Fauna 3, Bulaksumur, 55281 Yogyakarta, Indonesia

Table 1: Quantitative requirements of male goat

	Age		
Parameters	0, 5-1	>1-2	>2-4
Weight (kg)	29±5	40±9	54±11
Shoulder height (cm)	67±5	75±8	87±5
Body height (cm)	53±8	61±7	63±5
Chest size (cm)	71±6	80±8	89±8
Ear length (cm)	23±3	26±4	30±4
Fur length (cm)	11±4	14±5	23±5

Table 2: Quantitative requirements of female goat

	Age		
Parameters	0, 5-1	>1-2	>2-4
Weight (kg)	22±5	34±6	41±7
Shoulder height (cm)	60±5	71±5	75±5
Body height (cm)	50±5	57±5	60±5
Chest size (cm)	63±6	76±7	81±7
Ear length (cm)	24±3	26±3	27±3
Fur length (cm)	11±4	14±6	14±5

Indonesian National Standards Agency in 2008

requirements of goat into two, namely: qualitative and quantitative requirements. Qualitative requirements including fur color combination of white-black or white-brown, convex face profile, male and female small horns curved backwards, short tail while the quantitative requirements are presented in Table 1 and 2.

After Indonesian independence and centers of goat farms started to emerge, especially in Java, local governments began to often hold Ettawa crossbred goat competitions. Ettawa crossbred goat for contest has several criteria including posture, height, body length, shape of head, ears, wattle, legs and hooves, tail, sex, fur pattern and good health. Ettawa crossbred goat maintenance has a value as producers of meat, milk, leather and fiber (fur, mohair and pashima). Ettawa crossbred goat farmers tend to think that black head goat with white body are better than a brown head and the other. Black head goat is the most favorite and has a selling price which is more expensive than the goat whose head is hairy brown. Among the farmers, there are indications of high perception that black head goat is qualified. National standardization agency stated that high-quality goat has several specifications and parameters as mentioned above. If this continues to happen, selection of brown head goat and other colors will occur and black goat head will be very dominant. Under these circumstances, the researcher would like to answer the following research questions: How does the perception of farmers against a black goat head in Kaligesing and factors that influence their perception against a black head goat in Kaligesing? This study aims to: assess the perceptions of the goat farmers towards black head Ettawa crossbred goat in Kaligesing and analyze the factors that influence their perception against a black goat head in Kaligesing.

MATERIALS AND METHODS

The research was conducted in three different areas that have goat farmer group that is Pandanrejo, Tlogoguwo and Kaligono, Kaligesing, Purworejo, Central Java. The material used in this study were 100 respondents who are farmers in Pandanrejo, Tlogoguwo and Kaligono village, Kaligesing, Purworejo, Central Java. The method used in this study is a survey method. Data were obtained by distributing 100 questionnaires in three different strata area, the upper area in Kaligesing is Pandanrejo village, central area is Tlogoguwo village and the lower area is Kaligono Village. Questionnaires filled by farmers and also interviews conducted directly to the respondents who are goat farmers.

Validity and reliability testing of the research variables: The researcher distributed 30 questionnaires in the market goat in Turi, Sleman Regency to test the validity and reliability of the questionnaire before it was distributed in goat market in Kaligesing, considering that goat market in Turi has similarities with goat market in Kaligesing since both are in the highlands. The number of Ettawa crossbred goat groups is quite a lot and active as well as the total goat population which is quite sufficient. Validity test was conducted to describe the level of the relevant instrument in measuring what has to be measured.

After testing all characteristic question items, existence, management, productivity and market, it was identified that the Pearson correlation is positive, meaning that every question item in measurement devices are positively related but it appears that not all items have a strong relationship but all the question items met the significance criteria of <0.05, so we need further testing. Reliability measurements were performed to test the consistency of the variables. Consistency shows how well the items that measure a unified concept into a collection. Cronbach's alpha reliability coefficient is showing how well the items in the collection are positively correlated each other. The closer Cronbach's alpha to 1, the higher the internal consistency. Based on the measurement, all of variables have a Cronbach's alpha >0.6, thus it stated to be reliable and feasible to do further testing.

Data analysis: The collected data were analyzed using multiple linear regression analysis. Multiple linear regression equation as follows:

$$Y = a+b1X1+b2X2\times b3X3+b4X4+b5X5...+bnXn$$

Where:

Y = The dependent variable (the predicted value) of perception

X1-5 = The independent variables in this research are the experience, education, occupation, income and gender

a = Constant (value Y' if X1, X2 ... ..Xn = 0)

b = Regression coefficient (value increase or decrease)

RESULTS AND DISCUSSION

Respondents' characteristics: Respondents' characteristics include the respondents' age, current education, gender, occupation, monthly income and farming experience. Characteristics of respondents more presented in Table 3.

Age: The age of respondents in this research ranged from 21-90 years old (49±14) (Table 3). The youngest age ranged from 21-30 years old with a percentage of 16%, while the oldest ranged from 81-84 years old with a percentage of 1%. The majority of the s respondents were in the age group between 51-60 year old with a percentage of 27, between 41-50 year old with a percentage of 25, between 61-70 year old with a percentage of 20, between 20-30 year old with a percentage of 16, between 31-40 old year with a percentage of 10, between 71-80 year old and between 81-90 years old with the same percentage of 1. The productive age category is 15-65 year old or it can be concluded that working-age population is 15 year old or more. In Kaligesing, it was identified that the farmers' average age is 49 that can be categorized as productive age.

Table 3: Respondents' characteristics

Category	Total person	Percentage
Age		
21-30 year	16	16
31-40 year	10	10
41-50 year	25	25
51-60 year	27	27
61-70 year	20	20
71-80 year	1	1
81-84 year	1	1
(21-90 year) (49±13.9)		
Education		
Uneducated	1	1
Elementary school	34	34
Junior high school	19	19
Senior high school	34	34
Diploma	10	10
Undergraduate	2	2
Main occupation		
Farmer	86	86
Non-farmer	14	14
Monthly income		
<Rp 500,000	38	38
Rp 500,000-1,000,000	40	40
>Rp 1,000,000-2,000,000	19	19
>Rp 2,000,000	3	3
(Average) (1,021,500±679,061)		
Gender		
Male	83	83
Female	17	17
Farming experience		
6-25 year	22	22
26-45 year	53	53
46-65 year	23	23
66-85 year (35.32±14)	2	2

Education: Respondents' education of in this research ranged from the respondents who did not have formal education to those who got formal education starting from elementary school to undergraduate. Most respondents' education group is elementary and secondary school (senior high school) which the same largest percentage of 34 while the lowest education level were those who had no formal education with the rate of 1%. Educated group of junior high school was 19%, diploma was 10% and undergraduate was of 2%. Goat farmers' average education in Kaligesing ranged from elementary school to high school and only a few were continuing to higher education (Table 3). Education is a process of forming a person's character obtain the knowledge, understanding and ways of behaving, education. Both formal and non formal education is a means to improve knowledge and skills.

Occupation: The main occupation of the respondents in this research were farmers and non-farmers. Respondents with an occupation as farmers were 86% of the total respondents and 14% of non-farmers. Non-farmer respondents were civil servants, non-government employees or have their own business outside farming which became their primary income (Table 3). Occupation was activities in daily life, meaning that the more suitable type of job that is occupied, the higher the level of satisfaction obtained.

Income: Respondents' income in this research ranged from below IDR 500,000-2,000,000. The majority of the group respondents were IDR 500,000-1,000,000 with a percentage of 40 while the minority respondents are earning >IDR 2,000,000 with a percentage of 3, <IDR 500,000 with the percentage of 38 and Rp 1,000,000-2,000,000 with a percentage of 19 (Table 3).

Gender: Respondents in this research were men and women who have a Ettawa crossbred goat. Most of respondents were male with a percentage of 83 while were 17% (Table 3).

Table 4: Percentage of perception' statements

Question	SA (%)	A (%)	U (%)	D (%)	SD (%)
Black head Ettawa crossbred goat is suitable for companion animal	58	41	0	0	1
Black head Ettawa crossbred goat seems interesting to be seen	49	50	1	0	0
Ettawa crossbred goat's black head is more attractive	43	56	0	1	0
Black head Ettawa crossbred goat is gentler	34	57	8	1	0
Black head Ettawa crossbred goat is easier to get and available	25	42	22	11	0
I bought black head Ettawa crossbred goat because I'm interested in goat contest.	30	34	10	23	3
Black head Ettawa crossbred goat is excellent in goat contest	35	56	3	5	1
I bought black head Ettawa crossbred goat is because it is popular	43	43	7	7	0
Black head Ettawa crossbred goat is easier to maintain	26	31	20	18	5
Black head Ettawa crossbred goat is more easily to feed	24	37	14	24	1
Black head Ettawa crossbred goat is more resistant to disease is more resistant to disease	28	17	19	32	4
Black head Ettawa crossbred goat produced more milk/its milk productivity is higher	22	47	19	13	1
Black head Ettawa crossbred goat produce more lamb	22	31	16	28	3
Black head Ettawa crossbred goat is more easily adapted to a new environment	27	37	17	17	2
Black head Ettawa crossbred goat is growing up faster	26	43	13	13	5
Black head Ettawa crossbred goat is superior sires	44	43	5	8	0
The selling price of black head Ettawa crossbred goat is more expensive	47	45	5	3	0
Black head Ettawa crossbred goat is easier to sell	39	56	1	4	0
Black head Ettawa crossbred goat is suitable for sale	46	40	6	8	0
Raising black head Ettawa crossbred goat gives more favorable result	41	52	4	3	0
Buyer goat prefers black head Ettawa crossbred goat	42	51	3	4	0

SA = Strongly Agree; A = Agree; U = Undecided; D = Disagree; SD = Strongly Disagree

Farming experience: Respondents' farming experience of in this research ranged from 6-85 years (35.32±14). Most of the group members have 26-45 raising experience with a percentage of 53 while the minority of have 66-85 year with a percentage of 2. Those who have between 6 month 25 years experience were 22%, between 16-25 year were of 13% and between 46-65 year were 23%. The average experience of goat farmers in Kaligesing was long enough. It can be visible from the majority of respondents' experience in raising Ettawa crossbred goats is between 26-45 year (Table 3). According to Wibowo and Haryadi (2006), experience in raising cattle affected the success rate of farmers in developing a business. The longer of the experience of raising cattle, their level of skills and knowledge in applying the technology is getting better.

Farmers' perception: Farmers' statements on perception are presented in Table 4. As many as 58% respondents stated strongly agree with the statement of black head Ettawa crossbred goat would be a great companion animal. It is supported by 41% agreed respondents with the statement. As many as 50% respondents agreed with the statement stated that black head Ettawa crossbred goat was more enjoyable to take a look. It is supported by 49% strongly agreed respondents towards the statement. As many as 56% respondents agreed with the statement stated that black head Ettawa crossbred goat is more interesting. It is supported by 43% strongly agreed respondent towards the statement. As many as 57% respondents agreed with the statement stated that black head Ettawa crossbred goat is gentler. It is supported by 34% strongly agreed respondents towards the statement. As many as 42% respondents agreed with the statement stated that black head Ettawa crossbred goat is more easily obtained. It is supported by 25% strongly agreed respondents towards the statement (Table 4). As many as 34% of respondents agreed with the statement stated that they buy black head Ettawa crossbred goat because they were interested in the goat contest. It is supported by 30% strongly agreed respondents towards the statement. As many as 56% respondents agreed with the statement stated that black head Ettawa crossbred goat is a primary contestant in the contest. It is supported by 35% strongly agreed respondents towards the statement. As many as 43% respondents strongly agreed with the statement stated that they bought black head Ettawa crossbred goat since it is popular. It is supported by 43% agreed respondents towards the statement (Table 4). As many as 31% respondents agreed with the statement stated that black head Ettawa crossbred goat is easier to maintain. It is supported by 26% strongly agreed respondents towards the statement. In the statement of black head Ettawa crossbred goat is more easily to feed, the percentage have almost has the same value of 37% respondents that agreed with the statement, supported by 24% strongly agreed respondents. This shows that the farmers' perception towards the statement of black head Ettawa crossbred goat is more easily to feed remains high. In the statement of black head Ettawa crossbred goat is more resistant to disease, the percentage of respondents have almost the same value of 17% respondents, supported by 28% strongly agreed respondents. This shows that the perception towards statement that black head Ettawa crossbred goat are more resistant to the disease remains high. As many as 47% of respondents

agreed with the statement of black head Ettawa crossbred goat produced more milk, supported by 22% strongly agreed respondents with the statement. As many as 31% respondents agreed of the statements stated that black head Ettawa crossbred goat produce more lamb and supported by 22% strongly agreed respondents towards the statement. The statement stated that black head Ettawa crossbred goat are more easily adapt to the new environment has 37% agreed respondents and supported by 27% strongly agreed respondents towards the statement. This shows that the perception towards the statement states that black head Ettawa crossbred goat are more easily adapt to the new environment remains high (Table 4).

As many as 43% respondents agreed with the statement stated that black head Ettawa crossbred goat is more quickly growing up and supported by 26% strongly agreed respondents with the statement. As many as 44% of respondents strongly agreed towards the statement stated that black head Ettawa crossbred goat is superior sires and supported by 43% agreed respondents towards the statement. As many as 47% respondents strongly agreed with the statement stated that the selling price of black head Ettawa crossbred goat is more expensive and supported by 45% agreed respondents towards the statement. As many as 39% of respondents agreed with the statement of the head of a black goat is easier to be sold and supported by 56% of respondents strongly agreed towards the statement. As many as 46% of respondents strongly agree with the statement stated that black head Ettawa crossbred goat suitable to be traded and supported by 40% agreed respondents towards the statement. As many as 42% of respondents strongly agreed with the statement stated that raising black head Ettawa crossbred goat gave more favorable income and supported by 51% agreed respondents towards the statement. As many as 51% respondents agreed with the statement stated that goat buyers prefer black head Ettawa crossbred goat and supported by 42% strongly agreed respondents towards the (Table 4). Farmers in Kaligesing as respondents, raise black head Ettawa crossbred goat due to its characteristics, existence, management and productivity that has superior quality as well as in terms of its high economic value.

Farmers' perception is an individual assessment process towards an object in the form of responses given by the farmers in Kaligesing. Each of them has different characteristics in terms of age, education, gender, farming experience and monthly income. Farmers' perception level in Kaligesing is presented in Table 5.

As many as 68% farmers in Kaligesing have a high perception towards black head Ettawa crossbred goat 32% of them have an intermediate perception and 0% of them have a low perception.

Table 5: Farmers' perception level

Perception level	Total	Percentage
Low	0	0
Intermediate	32	32
High	68	68

Table 6: Effects of farmers' age, education, experience and income towards their perception in Kaligesing

Variables	Regression coefficient	Significancy
Age	-0.489	0.046*
Education	-0.576	0.144
Pengalaman	0.786	0.002**
Experience	0.005	0.010*
Gender	6.827	0.030*
Constant	80.952	
R^2	0.282	

*,**Significant at level p = 0.05; 0.01

Effect of age, education, experience, income and gender variable towards farmers' perception in kaligesing: Regression is a test that is done primarily for the purpose of forecasting. In a regression test, there are dependent and independent variable. In this research, the dependent variable is the farmers' perception and the independent variables include farmers' age, education, experience and income. Multiple linear regression analysis produced multiple linear regression model that describes the influence of farmers' age, education, experience and income. The linear test results can be seen in Table 6. Table 6 has the equation:

$$Y = 80.952-0.489X1-0.576X2+ 0.786X3+0.005X4+6.827X5$$

Constant (a) of 80.952 means if the farmers' age, education, experience and income value is 0, the value perception is 80.952. The R^2 is the coefficient of determination value that has a value between 0 and 1 and demonstrates the ability of the independent variables in explaining the dependent variable. R^2 value of the characteristics variable of the respondents was 0.282 meaning that 28.2% farmers' perception in Kaligesing explained by the respondents' characteristics of age, education, gender, experience and income while the remaining of 71.8% is explained by other factors that was not included in the model of research. Table 6 shows that age has a significant result of $p<0.05$ meaning that there is a relationship between age and farmers' perception against black head Ettawa crossbred goat in Kaligesing. Age has a regression coefficient of -0.489 meaning that if another variable value is fixed and age rose 1%, the perception will be decreased by 0.489 and the coefficient is negative, it means there is a negative relationship between farmers' age and perception. The older the age of the farmer is, it will decrease their perception. Farmers' age will be in line with ther experience and knowledge in

accordance with the biological growth and psychological development. The younger the age of the farmers usually have the immense curiosity spirit of the new things.

Table 6 shows that education has a regression coefficient of -0.576 ($p>0.05$) which means non significant or there is no relationship between farmers' education and perceptions towards a black head Ettawa crossbred goat in Kaligesing. Education is a process of forming a person's character and to obtain the knowledge as well as understanding ways of behaving. The formation process of character occurs in the interaction between the individual potential (intelligence, talent), the environment and education. The education level can affect perception. So, if the farmer education level is low, then the ability to perceive will also be low. Otherwise, if the famers have a good educational background, the ability to perceive also be better. Insignificant between the farmers perception to education due to the farming experience possessed by farmers for maintaining the black head Ettawa crossbred goat had enough, so that their level of knowledge is more influential than education. Formal education is not enough to support the individual efforts. Experience is still highly needed to develop the cattle business for farmers. Table 9 shows that the experience in raising black head Ettawa crossbred goat has a very significant result of $p = 0.01$ which means that there is a relationship between farmers' experience and perception towards black head Ettawa crossbred goat in Kaligesing.

The experience of the respondents has a regression coefficient of 0.786, meaning that if another variable value is fixed and experience increased 1%, then the perception will be increased 0.786 and the coefficient is positive. It means there is a positive relationship between experiences and perception. The higher the experience, it will increase the perception. Experience is an interaction experienced by a person during his life and his environment, so that he gained the knowledge, skills and understanding of an event. Experience will be the basis for the formation of individual perception to provide feedback and appreciation. Someone must have experience of the particular object. In making a decision about a variety of issues, one heavily influenced by experiences in the past, skills perceptions and assumptions about certain situations.

Table 6 shows that income has a significant result $p<0.05$ which means there is a relationship between the farmers' income and perception towards black head Ettawa crossbred goat in Kaligesing. Monthly income of the respondents had a regression coefficient of 0.005 which means if other variables have fixed value and revenue increased 1%, the perception will increase 0.005 and the coefficient is positive. It means there is a positive relationship between income and perception. If the income higher, perception will increase. Elias and Faraq (2010) stated that the ethical perception is influenced by several factors, one of which is money. Money is an important aspect in daily life. Although the money is used universally, the meaning and importance of money is not universally accepted.

Table 6 shows that gender has a significant result $p<0.05$, which means that there is a relationship between farmers' gender and perception towards black head Ettawa crossbred goat in Kaligesing. The gender of the respondents have a regression coefficient of 0.005 which means that if other variables have fixed value and revenue increased 1%, the perception will be increased by 0.005 and the coefficient is positive. It means there is a positive relationship between perception and gender. Male gender has better perceptions towards black head Ettawa crossbred goat in Kaligesing than the female. A person's emotions clearly affect one's perception. Men tend to be able to control his emotions than women. Public perception may vary; depend on gender (Flynn *et al*., 1994).

CONCLUSION

Based on the analysis of the farmers' perception level towards black head Ettawa crossbred goat in Kaligesing, it can be concluded that black head Ettawa crossbred goat had great demand in Kaligesing. Farmers prefer black head than a red-headed goat or white-headed. Farmers' farming experience, income and gender have positive effect on their farmers. Farmers' age negatively affect their perception. Red heads and white heads Ettawa crossbred goat should be received and maintained in the community so it will not excluded and then considering decline their populations since their color are equally. The government should take action to equalize the perception of red and white head with a black head Ettawa crossbred goat with by arranging contests for red and white head Ettawa crossbred goat. By arranging the contest for red and white head Ettawa crossbred goat, farmers will raise red heads and white head Ettawa crossbred goat, thus they will not be underestimated by the farmers. Further research needs to be conducted to determine the productivity of black, red and white head Ettawa crossbred goat in order to obtain accurate information about the actual productivity.

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