

Analyze and Determine the Factors That Affecting Chicken Farmer Income in Aceh Tamiang District

Agus Ismawan, Rahmanta, Irsyad Lubis

Faculty of Economics and Business, Department of Economics, Universitas Sumatera Utara, Indonesia

Corresponding Author: Agus Ismawan

ABSTRACT

This study aims to analyze and determine the factors that affecting chicken farmer income in Aceh Tamiang District. The independent variables used in this study are chicken prices, working capital, length of business, work time. The data used are primary data with 60 respondents. Data collection techniques were carried out by means of interviews, observations, and questionnaires related to this study. Analyzed by multiple linear regression models using the Eviews 7 program. The results of this study indicate that broiler farmer chicken prices has a positive and significant effect on broiler farmer income in Aceh Tamiang District, while native chicken price has a positive and not significant effect on native farmer income in Aceh Tamiang District. Broiler farmer working capital has a positive and significant effect on broiler farmer income in Aceh Tamiang District. As for the working capital of native farmer, it has a positive and insignificant effect on native farmer income in Aceh Tamiang District. Broiler farmers length of business has a positive and not significant effect on broiler farmer income in Aceh Tamiang District. While for length of business of native farmer has a positive and significant effect on native farmer income in Aceh Tamiang District. Broiler farmer work time has a positive and not significant effect on broiler farmer income in Aceh Tamiang District. Whereas work time of native farmer has a positive and significant effect on native farmer income in Aceh Tamiang District.

Keywords: Chicken Prices, Working Capital, Length of Business, Work Time, Farmer Income.

INTRODUCTION

The economic development of a country and region is inseparable from the economic activities of the community. The economy is formed from a number of business sectors both formal and informal sectors with the aim of earning a decent income to meet the needs of life and welfare of family members. Every person who seeks income, the higher a person's income the higher the level of welfare and more needs and desires that can be achieved (Todaro, 2000: 43).

In the New Order era development program explained that development is prioritized in the livestock sector which

aims to establish food self-sufficiency and also increase agricultural production. The agricultural sector is one of the mainstay sectors in national development, because the agricultural sector is the biggest contributor to the national economy after the manufacturing industry sector (Sukirno, 2009: 78).

Livestock subsector which is part of the agricultural sector has an important role in supporting regional and national economies. Based on statistical data from the National Statistics Agency (BPS) from 2000 to 2006 (in Ilham, 2006: 30), the gross domestic product (GDP) of the livestock sub-sector began to rise again after being hit

by the economic crisis, with a gross domestic product growth rate (GDP) between 2000 and 2006 of 3.63 percent. In the same period, the figure was above the growth rate of the food crop sector 2.05 percent, the plantation subsector was 3.24 percent and the forestry sub-sector was - 0.07 percent. The livestock sub-sector is able to grow rapidly, because it is supported by the development of the livestock industry, especially broiler and beef cattle.

Chickens are livestock that are easily maintained and most economical compared to other livestock (Rasyaf, 2010: 5). Chicken farms can be carried out in the homes of residents who are side businesses and there are also those who maintain them on very large land. Chicken farming is also very promising from year to year, so its role is increasingly prominent in increasing the business income of chicken farmers.

Demand for chicken products is expected to continue to increase, this is influenced by two factors, namely: (1) Income, consumption of livestock products increases when the population's income rises; (2) Prices, falling prices will increase consumption (Priyatno, 2000: 89).

Increasing the number of residents in an area or region will increase the number of requests for chickens (Rasyaf, 2010: 30). Residents or people who need food or consumption every day like chickens that are rich in protein to increase energy in carrying out their activities. Based on data from the Central Statistics Agency (BPS) of Aceh Tamiang Regency in 2013-2017, the population and population of chickens can be seen in Table 1.1.

Table 1.1. Population and Chicken Population in Aceh Tamiang Regency 2013-2017

Year	Total Population (Soul)	Population Chicken (Tail)	
		Kampong chicken	Broiler
2013	269.007	137.684	106.700
2014	272.228	152.401	126.603
2015	278.324	160.450	141.754
2016	282.921	168.690	149.111
2017	287.007	172.930	152.900

Source: Aceh Tamiang District in Figures 2014-2018, BPS Aceh Tamiang Regency

In Table 1.1. shows that overall the increase in population per year will result in an increase in the number of chicken populations in Aceh Tamiang Regency. The population of Aceh Tamiang Regency in 2013 had a population of 269,007 people until in 2017 the population was 287,007. Whereas when viewed chicken population experienced an increase in quantity of tails from year to year, in 2015 the number of free-range chicken was 160,450 tails and the number of broilers was 141,754 tails. This increase continued in 2017 where the number of free-range chicken was 172,930 and pedading was 152,900.

Table 1.2. Chicken Meat Production in Aceh Tamiang Regency 2013-2017

Year	Chicken Meat Production (Kg)	
	Kampong chicken	Broiler
2013	37.684	379.400
2014	42.401	426.603
2015	51.114	559.238
2016	67.226	676.809
2017	75.664	808.512

Source: Aceh Tamiang District in Figures 2014-2018, BPS Aceh Tamiang Regency

Table 1.2. shows that chicken meat production increases in number every year. It was recorded in 2015 that the production of free-range chicken was 51,114 kilograms, broiler 559,238 kilograms. Whereas in 2017 there was an increase in production quantity where the total production of free-range chicken was 75,664 kilograms, broiler 808,512 kilograms. This increase in production can be used as an indicator of an increase in chicken meat consumption in Aceh Tamiang Regency. Chickens have great potential to be developed because production has increased from year to year. Considering the role in fulfilling the need for meat is relatively cheap, then chicken production is more done than other meat production. In other words, the development of the livestock subsector in the field of poultry, especially chicken farming, is one of the efforts that are expected to bring changes in the community's economy towards a better direction. This also supports the development of chicken farms in various provinces in Indonesia, including

in Aceh, especially in Aceh Tamiang District.

The welfare of a chicken farmer can be seen from his income and the factors that influence the income of chicken farmers. If buying and selling activities run smoothly, the income of chicken farmers will be stable and their welfare will increase.

Capital is a very important thing in doing business. Capital is all forms of wealth that can be used directly or indirectly in the production process to increase output (Sukirno, 2009: 22). The capital for raising livestock can be sourced from internal farmers and other sources other than farmers, both in the form of loans from banks and non-bank institutions. Based on the results of the pre-research interviews with several chicken farmers in Aceh Tamiang District, many complained about the difficulty of getting capital, to obtain a capital loan there must be collateral that they gave as collateral for the loan. But many of the chicken breeders who do not meet these requirements and the high interest that must be paid makes the problem itself. These are the problems related to capital from chicken farmers.

In addition to capital factors, according to Sawir (2001: 40) the length of business also affects the income of chicken farmers. The longer the business stands, it will increase the income of chicken farmers (Wicaksono, 2011: 16). This is because in general, businesses that have long been able to take more mature policies based on existing experience. This certainly can increase the income of chicken farmers.

Other internal factors such as time, appropriate work time and flexibility also affect income. The longer working time will certainly provide more opportunities in attracting visitors who come and short time tends to influence the income of chicken farmers currently obtained (Firdausa, 2013: 33).

The prospect of the livestock sector in Aceh Tamiang Regency will continue to grow accompanied by the rapid population and production of chickens, so an in-depth

study of the factors affecting the income of chicken farmers in Aceh Tamiang Regency is needed.

At this time it is still unknown what the income of chicken farmers in Aceh Tamiang Regency is and what variables affect their income. Based on this background, this study will examine the analysis of factors that influence the income of chicken farmers in Aceh Tamiang District.

MATERIALS AND METHODS

Method of Collecting Data

The scope of this research is chicken farmers in Aceh Tamiang Regency. The variables studied were chicken prices, working capital, length of business, and work time which were the independent variables and income of Aceh Tamiang Regency chicken farmers as the dependent variable. The location of the study was carried out in Chicken Farm, Aceh Tamiang Regency.

The types of data in this study are primary and secondary data obtained directly in the field, namely chicken farmers in Aceh Tamiang District and Aceh Province BPS.

In this study, 60 samples of chicken farmers in Aceh Tamiang District were taken as samples or respondents, where there were 30 respondents from native chicken farmers and 30 respondents from broiler breeders using snowball sampling method.

Table 2.1. Amount of Chicken Population in Aceh Tamiang Regency According to the District of 2017

No.	Kecamatan	Ayam Kampung	Ayam Pedaging
1.	Tamiang Hulu	2.560	800
2.	Bandar Pusaka	6.200	1.300
3.	KejuruanMuda	26.800	15.000
4.	Tenggulun	4.700	7.500
5.	Rantau	52.631	70.000
6.	Kota Kuala Simpang	3.100	3000
7.	Seruway	13.654	6000
8.	Bendahara	9.880	6000
9.	Banda Mulia	4.168	500
10.	KarangBaru	23.670	10.000
11.	Sekerak	7.400	800
12.	ManyakPayed	18.167	32.000
13.	Aceh Tamiang	172.930	152.900

Source: Aceh Tamiang Regency in Figures 2018, BPS Aceh Tamiang Regency

The research analysis model can be scientifically written through the regression equation expressed as follows:

a. Broiler Breeders Model

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Information:

Y = Broiler Breeder Income (Million Rupiah / Month)

X1 = Broiler Prices (Rupiah Unit)

X2 = Working Capital (Million Rupiah / Month)

X3 = Duration of Business (Year)

X4 = Working Time (Hours / Days)

α = constant

$\beta_1 \beta_2 \beta_3 \beta_4$ = Regression Coefficient

ε = Error Error

b. Village Chicken Farmer Model

$$Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Information:

Y = Village Chicken Farmer Income (Million Rupiah / Month)

X1= Price of Village Chicken (Unit of Rupiah)

X2 = Working Capital (Million Rupiah / Month)

X3 = Duration of Business (Year)

X4 = Working Time (Hours / Days)

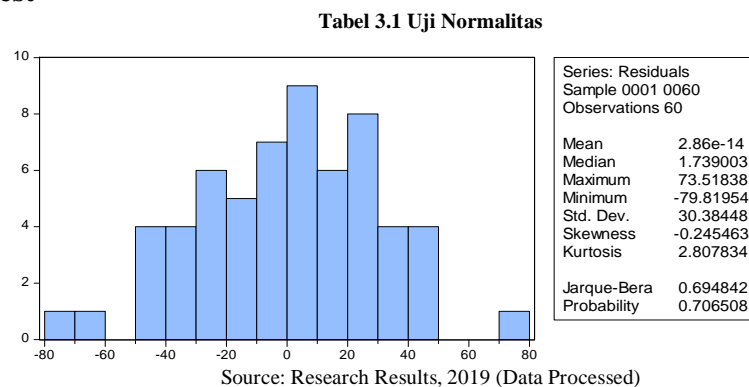
α = constant

$\beta_1 \beta_2 \beta_3 \beta_4$ = Regression Coefficient

ε = Error Error

RESULTS

Normality Test



The results of the residual normality test above show probability values of 0.706508 > 0.05, which means that the residuals are normally distributed.

Heteroscedasticity Test

Table 3.2 Heterokedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.684198	Prob. F(4,55)	0.6059
Obs*R-squared	2.844072	Prob. Chi-Square(4)	0.5842
Scaled explained SS	2.160190	Prob. Chi-Square(4)	0.7063

Source: Research Results, 2019 (Data Processed)

The value of p value is indicated by the value of prob. chi-square (4) at obs * r-squared which is equal to 0.5842. Therefore, the value of p value is 0.842 > 0.05, which means the regression model is free from the symptoms of heteroscedasticity.

Multicollinearity Test

Table 3.3 Multicollinearity Test

Date: 04/26/19 Time: 16:44			
Sample: 0001 0060			
Included observations: 60			
	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
C	680.5993	41.23346	NA
X1	0.116912	8.741021	1.236557
X2	0.003913	9.819026	1.356120
X3	2.421882	6.006042	1.567538
X4	9.228975	52.47422	1.480293

Source: Research Results, 2019 (Data Processed)

Correlation Test

Table 3.4 Correlation Test

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	2.652826	Prob. F(2,53)	0.0798
Obs*R-squared	5.459833	Prob. Chi-Square(2)	0.0652

Source: Research Results, 2019 (Data Processed)

Prob value. chi-square (2) which is a probability test value of breusch-godfrey serial correlation LM, which is equal to

0.0652 5 0.05 so there is no problem with serial autocorrelation.

Multiple Linear Regression

Based on primary data, to see the effect of variables on chicken prices, working capital, length of business, work time on broiler farmer income, the statistical coefficients of each variable can be analyzed. The statistical coefficients of each independent variable can be calculated with the help of computers through the Eviews 7 program with the following results:

1. Broiler Breeders Model

Table 3.5. Regression Results of Broiler Prices, Working Capital, Duration of Business,

Working Time for Broiler Breeders Revenues			
Variable	Coefficient	Prob.	Information
Constant	185,581	0,000	
X ₁ (Broiler Prices)	3,355	0,015	Significant
X ₂ (Working capital)	0,213	0,016	Significant
X ₃ (Duration)	3,184	0,226	Not significant
X ₄ (Working time)	2,688	0,545	Not significant
R ² = 0,602			
Prob. F = 0,000			

Source: Research Results, 2019 (Data Processed)

Based on the results of the estimation model of chicken farmer's income function presented in table 3.5, the results of the equation are as follows:

$$Y = 185,581 + 3,355X_1 + 0,213X_2 + 3,184X_3 + 2,688X_4$$

The analysis of the results of the estimation model can be interpreted as follows:

1. Partial Effect of Variables

a. Constant (a)

Based on Table 3.5, it can be seen that the constant coefficient is 185,581. This coefficient means that in a fixed state or there is no change in the variable price of chicken (X1), working capital (X2), length of business (X3), work time (X4), broiler farmer income (Y) remains at 185.581 million per month.

b. Coefficient of Broiler Prices (X1)

Based on Table 3.5, it can be seen that the variable coefficient of broiler prices empirical results is 3.355. The empirical coefficient of chicken price variable shows a positive effect which means that if the price of chicken increases by one rupiah assuming another variable is constant it will increase

the income of broiler farmers by 3.355 million per month.

c. Working Capital Coefficient (X2)

Based on Table 3.5, it can be seen that the empirical working capital coefficient variable is 0.213. The empirical coefficient of the working capital variable shows a positive effect which means that if the working capital increases by one rupiah per month assuming another variable is constant, it will increase the income of broiler farmers by 0.213 million per month.

d. Duration Coefficient (X3)

Based on Table 3.5, it can be seen that the old business coefficient variable empirical results are 3.184. The empirical coefficient of the old variable of business shows a positive effect which implies that if the duration of the business increases by one year assuming another variable is constant it will increase the income of broiler breeders by 3.184 million per month.

e. Working Time Coefficient (X4)

Based on Table 3.5, it can be seen that the working time coefficient variable empirical results is 2.688. The empirical coefficient of work time variable shows a positive influence which means that if work time increases by one hour per day assuming another variable is constant it will increase the income of broiler breeders by 2.688 million per month.

Coefficient of Determination (R²)

Based on Table 3.5, the results of the empirical model show R2 of 0.602 is at 50 <R2> 0.90. This means that the empirical model built on the income of broiler breeders is determined by the variable price of broilers (X1), working capital (X2), length of business (X3), working time (X4) is not good because R2 = 50 < 0.602 > 0.90.

The coefficient of determination (R-Square) of 0.602 informs that together the variable price of broiler (X1), working capital (X2), length of business (X3), work time (X4) is able to explain variable variations in broiler farmer income amounting to 60.2%, while the remaining 39.8% is explained by other factors not included in this research model.

Partial Test (T Test)

The t test is done to partially test whether broiler prices (X1), working capital (X2), length of business (X3), work time (X4), partially or each significantly influence the income of broiler farmers (Y) in Aceh Tamiang Regency.

Formulation of the Hypothesis:

$H_0: \beta_0 = 0$ Means the variable price of broiler (X1), working capital (X2), length of business (X3), work time (X4) simultaneously does not significantly influence the income of broiler farmers (Y) in Aceh Tamiang Regency.

$H_0: \beta_0 \neq 0$: Inya 0 means the variable price of broiler (X1), working capital (X2), length of business (X3), work time (X4) simultaneously have a significant effect on the income of broiler farmers (Y) in Aceh Tamiang Regency.

Decision criteria:

H_0 accepted if prob value. \geq error rate (α) 0.05

H_a accepted if prob value. $<$ error rate (α) 0.05

Simultaneously Test (Test F)

Based on Table 3.5, the probability F value is 0,000 $<$ confidence level (α) 0.05. Thus, H_0 is rejected and H_a is accepted. This shows broiler prices (X1), working capital (X2), length of business (X3), work time (X4) simultaneously have a significant effect on the income of broiler farmers (Y) in Aceh Tamiang District.

2. Village Chicken Farmer Model

The statistical coefficients of each independent variable can be calculated with the help of computers through the Eviews 7 program with the following results:

Table 3.6 Regression Results for Kampung Chicken Prices, Working Capital, Duration of Business, Working Time for Kampung Chicken Breeders Income

Variable	Coefficient	Prob.	Information
Constant	140,087	0,000	
X ₁ (Village Chicken Prices)	0,290	0,669	Not significant
X ₂ (Working capital)	0,194	0,058	Not significant
X ₃ (Duration)	6,305	0,012	Significant
X ₄ (Working time)	14,663	0,003	Significant
R ² = 0,820 Prob. F = 0,000			

Source: Research Results, 2019 (Data Processed)

Based on the results of the estimation model of the function of the chicken farmer income presented in table 4.18, the results of the equation are as follows:

$$Y = 140,087 + 0,290X_1 + 0,194X_2 + 6,305X_3 + 14,663X_4$$

The analysis of the results of the estimation model can be interpreted as follows:

1. Partial Effect of Variables

a. Constant (a)

Based on Table 3.6, it can be seen that the constant coefficient is 140.087. This coefficient implies that in a fixed state or there is no change in the variable price of free-range chicken (X1), working capital (X2), length of business (X3), working time (X4), the income of chicken farmers (Y) is 140,087 million per month.

b. Price Coefficient of Kampung Chicken (X1)

Based on Table 3.6, it can be seen that the variable coefficient of the price of free-range chicken is empirical at 0.290. The empirical coefficient of chicken price variable shows a positive influence which means that if the chicken price increases by one rupiah assuming another variable is constant, it will increase the income of native chicken farmers by 0.290 million per month.

c. Working Capital Coefficient (X2)

Based on Table 3.6, it can be seen that the empirical working capital coefficient variable is 0.194. The empirical coefficient of the working capital variable shows a positive influence which implies that if the working capital increases by one rupiah per month assuming other variables are constant, it will increase the income of native chicken farmers by 0.194 million per month.

d. Duration Coefficient (X3)

Based on Table 3.6, it can be seen that the old business coefficient variable empirical results are 6.305. The empirical coefficient of the old variable of business shows a positive influence which means that if the length of the business increases by one year assuming other variables are constant,

it will increase the income of village chicken farmers by 6.305 million per month.

e. Working Time Coefficient (X4)

Based on Table 3.6, it can be seen that the working time coefficient variable empirical results are 14,663. The empirical coefficient of work time variable shows a positive influence which means that if work time increases by one hour per day assuming other variables are constant it will increase the income of native chicken farmers by 14.663 million per month.

Coefficient of Determination (R²)

Based on Table 3.6, the results of the empirical model show R² of 0.820 is at $50 < R^2 > 0.90$. This means that the empirical model built on the income of native chicken farmers is determined by the variable price of free-range chicken (X1), working capital (X2), length of business (X3), working time (X4) is not good because $R^2 = 50 < 0.820 > 0.90$.

The coefficient of determination (R-Square) of 0.820 informs that together the variable price of free-range chicken (X1), working capital (X2), length of business (X3), work time (X4) can explain variable variations in income of native chicken farmers 82%, while the remaining 18% is explained by other factors not included in this research model.

Partial Test (T Test)

T test is done to partially test whether the price of free-range chicken (X1), working capital (X2), length of business (X3), work time (X4), partially or each have a significant effect on the income of chicken farmers (Y) in Aceh Tamiang Regency.

Formulation of the Hypothesis:

$H_0: \beta_0 = 0$ Means the variable price of free-range chicken (X1), working capital (X2), length of business (X3), work time (X4) simultaneously does not significantly influence the income of native chicken farmers (Y) in Aceh Tamiang District.

$H_0: \beta_0 \neq 0$ Means the variable price of free-range chicken (X1), working capital (X2),

length of business (X3), work time (X4) simultaneously has a significant effect on the income of native chicken farmers (Y) in Aceh Tamiang Regency.

Test Simultaneously (Test F)

Based on Table 3.6, prob value. F is $0,000 < \text{confidence level } (\alpha) 0,05$. Thus, H_0 is rejected and H_a is accepted. This shows the price of free-range chicken (X1), working capital (X2), length of business (X3), work time (X4) simultaneously have a significant effect on the income of native chicken farmers (Y) in Aceh Tamiang District.

CONCLUSION

The results of the analysis carried out can be concluded as follows:

1. The price of broilers has a positive and significant effect on the income of broiler farmers in Aceh Tamiang Regency. Whereas the price of free-range chicken has a positive and not significant effect on the income of native chicken farmers in Aceh Tamiang Regency.
2. Broiler farmer's working capital has a positive and significant effect on the income of broiler farmers in Aceh Tamiang District. As for the working capital of native chicken farmers, it has a positive and insignificant effect on the income of native chicken farmers in Aceh Tamiang Regency.
3. The length of time broiler breeders have a positive and not significant effect on the income of broiler farmers in Aceh Tamiang Regency. While for the length of time the chicken farmer business has a positive and significant effect on the income of native chicken farmers in Aceh Tamiang Regency.
4. The working time of broiler breeders has a positive and not significant effect on the income of broiler farmers in Aceh Tamiang Regency. Whereas the working time of native chicken farmers has a positive and significant effect on the

income of native chicken farmers in Aceh Tamiang Regency.

REFERENCES

- Arifin, Muhammad. 2011. Pengaruh Kualitas Layanan dan Relationship Marketing terhadap Kepuasan Pelanggan di PT Cahya Persada Motor Surabaya. *Jurnal. Fakultas Ekonomi Universitas Pembangunan Nasional "Veteran" Jawa Timur*.
- Badan Pusat Statistik. 2014. Kabupaten Aceh Tamiang dalam Angka 2014. Aceh Tamiang: Badan Pusat Statistik Aceh Tamiang.
- _____. 2015. Kabupaten Aceh Tamiang dalam Angka 2015. Aceh Tamiang: Badan Pusat Statistik Aceh Tamiang.
- _____. 2016. Kabupaten Aceh Tamiang dalam Angka 2016. Aceh Tamiang: Badan Pusat Statistik Aceh Tamiang.
- _____. 2017. Kabupaten Aceh Tamiang dalam Angka 2017. Aceh Tamiang: Badan Pusat Statistik Aceh Tamiang.
- _____. 2018. Kabupaten Aceh Tamiang dalam Angka 2018. Aceh Tamiang: Badan Pusat Statistik Aceh Tamiang.
- Firdausa. 2013. *Pengaruh Modal Awal, Lama Usaha, dan Jam Kerja*. Semarang: Fakultas Ekonomi dan Bisnis, Universitas Diponegoro.
- Ilham. 2006. *Komunikasi Pemasaran, Strategi, dan Taktik*. Jakarta: Ghalia Indonesia.
- Kompang, L. P., M. H. Supriyati. 2001. *Kinerja Ayam Kampung dengan Sistem Pemberian Pakan secara Memilih dengan Bebas*. *Jurnal Ilmu Ternak dan Veteriner* 6:94-101.
- Priyatno, M. A. 2000. *Mendirikan Usaha Pemotongan Ayam*. Jakarta: Penebar Swadaya.
- Rasyaf, M. 2010. *Beternak Ayam: Edisi Revisi*. Jakarta: Penebar Swadaya.
- Sawir. 2001. *Analisis Kinerja Keuangan dan Perencanaan Keuangan Perusahaan*. Jakarta: PT Gramedia Pustaka Utama.
- Sukirno, Sadono. 2006. *Mikroekonomi: Teori Pengantar*. Jakarta: PT Raja Grafindo Persada.
- Todaro, Michael P. 2000. *Pembangunan Ekonomi di Dunia Ketiga*. Jakarta: Erlangga.
- Wicaksono, 2011. *Pengaruh Modal Awal, Lama Usaha, dan Jam Kerja terhadap Pendapatan Pedagang Kios di Pasar Bintoro Demak*. Semarang: Fakultas Ekonomi dan Bisnis, Universitas Diponegoro.

How to cite this article: Ismawan A, Rahmanta, Lubis I. Analyze and determine the factors that affecting chicken farmer income in Aceh Tamiang district. *International Journal of Research and Review*. 2019; 6(5):93-100.
