

## **The implication of farmers' behavior to the household economic income through economic decision (The study of farmers' household in minahasa regency)**

Henry J. D. Tamboto

*(Economics Faculty, Manado State University, Indonesia)*

---

**ABSTRACT :** *This research is intended to identify, analyze, and theoretically and empirically explain: the effect of farmers' behavior and farmers' economic decision; the effect of farmers' behavior with farmers' household income; farmers' economic decision with farmers' household income; and farmers' behavior with farmers' household income through farmers' economic decision. This research is an explanation (explanatory research), which explain the causal relationship among the research variables by the testing of hypothesis. The population in this research is farmers' household in Minahasa regency. With samples of this research are 120 respondents. Purposive sampling is used to collect the data and the data analysis of this research using path analysis. The results of the research showed that: farmers' behavior directly and significantly effect to the economic decision. farmers' behavior directly effect to farmers household income; economic decision is directly and significantly effect to the farmers household income; farmers behavior is indirectly and significantly to the farmers household with economic decision as intervening variable.*

**KEYWORDS** -*Economic Behavior, Farmers' Behavior, Economic Decision, Farmers' Household Income*

---

### **I. INTRODUCTION**

Empirical facts mentioned that agriculture sector is one of the indicators that contributed to Indonesia' Gross Domestic Product (GDP). By the end of 2013 the contribution of this sector to Indonesia GDP is about 10.6% [3], the cumulative growth rate of 3.01%. Agriculture sub sector contributes 73.40% (surplus) US\$13,470,819,000 in the October 2013 [3]. And as much as 39.96 million (13.42 million household) this sector pervade employee. The contribution of agriculture sector actually has indicated that this sector plays important role and strategic in increasing the growth rate and an increasing of Gross Domestic Product (GDP). However that thing, yet cannot support the rate of income of the society especially farmers. From the previous study and research, there are some obstacles and problems that have to be solved in this sector, such as: (1) limited and decreasing capacity of agriculture resources. (2) The inefficiency and mislead of technology conversion. (3) Limited access to the market service especially financial, (4) the long chain of marketing and unfair marketing system, (5) quality, Mentality, skilled farmer resources, (6) the institution and low bargaining of farmers. (7) Low coordination between the institution and bureaucracy, and (8) economic macro policy that not support the farmers. The other problems like natural disaster and unfriendly climate change has been other factors that significantly affecting.

Data [3] show the poverty population as of March 2013 reached 28.07 million people (11.37%), and amounted to 63.21% are in rural poverty. The government expectation to curb inflation throughout 2013 in regard to no avail, until the lid calendar 2013 inflation at 8.38% of the initial target of 5.8% which was revised to 7.2% due to the global economic downturn and also the increase in fuel prices and food commodity' price. Those are supported indications in the increasing rate of poverty [3].

Understanding the farmers' household existence lately especially rate of income that upstream to the prosperity. Besides above factors there is live behavior (way of consumption, way of living, etc) is the other thing that needs to be considered especially to the society who works as farmers. Various facts and phenomena supported that way and style of living of farmers implicate to the income. For instance, after harvesting farmers did not well manage their financial. Moreover they just spent the money that they earn for the things that they don't really need. So at the end, during reprocessing their farming field, they have to lend.

Attitude toward behavior, subjective norm [1] and behavior control [2] describe the positive interconnection between individual behaviors in making decision. Farmers' economic decision indicated from the production aspect, consumption, and time management and labor. The effort to make a decision normally based on the cost that will spend and the amount of income/revenue from the product. Factors like,

financial/credit, media/production equipment, market/marketing, price, marketing range, age, educational background, the rate of income direct and indirectly effect to the farmers economic decision ([11] and[24]).

Minahasa regency is one of regency in the North Sulawesi that has potentials such as cultures, nature, and human. The source of the economy in this area is about 20% driven by the agricultural sector. Minahasa consists of 25 (270 villages) districts with an area of 1667.01, with a population up to 2012 was 316 884 inhabitants. Minahasa Regency GDP Growth Rate applicability type through 2012 amounted to 6.81%. While GDP at current prices in the business field through 2012 amounted to 5,416,621.22, and the agricultural sector contributed for 1,168,779.75. GDP Minahasa Regency Top 2000 Constant Prices by Industrial Origin in 2012 amounted to 2,404,935.68, the agricultural sector accounted for 519,987.64 or 21.58% [4]. And amounted to 42.15% of this sector contributes to employment. From the description above, it clear that agriculture as barometer and leading sector or featured in Minahasa regency. It is a good strength and competitive comparative add the pockets of revenue.

Nevertheless, those contributions not yet guarantee farmer households in Minahasa regency earn a decent income, this is reflected from the writer observation. By putting the welfare indicator it shows the unstable condition and concerned still below regulated standard.

Based on above consideration, the effort to assess farmers' household economic behavior in Minahasa regency is needed by conducting a study and research on factors that implicated to farmers household economic behavior and household income of farmers. The purpose of this study is to find out the implication of farmers behavior to farmers economic decision; to find out and explain the implication of farmers behavior to farmers household income; to explain and analyze farmers economic decision and farmers household income; and to find out and explain the implication between farmers behavior to farmers household income through farmers economic decision.

## **II. THEORY AND HYPOTHESIS**

### **2.1. Behavior**

According to skinner, who was quoted by [15], theorized that behavior is a individual respond or reaction to outside stimulus or stimuli. However according to [15] and [2], Behavior is indicated by some factors such as: attitude, knowledge, and skills.

### **2.2. Farmers' household economic behavior**

Household is an economic organization, has the appropriate behavior and objectives with resource, activity, and satisfaction that it has. Human and physical resources including financial, the effort to maximize the income the satisfaction to earn the maximal welfare, by constraints of economic resources, technical, socio cultures, and law, included specific local culture in household. Household is decision makers in running the production and consumption also its relation with allocation of time [23]. In understanding the decision-making process in farmers households, especially in the production and consumption activities, can be used models to analyze the activities or behavior of farmers' households. The model is Agriculture Household Model. The resources allocation and the process of household decision making are influenced of those several factors [8]. Household economic behavior represented in the model of household in making decision. [13] demonstrated by various economic activity has been done, namely, allocation member of family namely the allocation of family labor, production and consumption.

### **2.3. Household' Economic Decision**

Theoretically, the economic model of agriculture household has simplicity to the relation of production decision, and consumption decision. Empirically, the correlation analysis between production and consumption is done simultaneously using economics theory with econometric models and statistical tests. Agriculture household is treated as a company, which aims to maximize the profit. [10]analysis, distinguished between the notion of recursive model and non-recursive model, and also separable model and non-separable. Recursive model shows one way stimulant relation from production to consumption, and not the opposite, meanwhile non-recursive model is both side relation stimulant between production decision and consumption decision, by loosed market assumption in imperfect market competition. Most models of economic agriculture households research, the studies using a single equation with all its simplicity, so it is need more complex estimation methods to solve the relationships between variables are increasingly complex.

### **2.4. Farmers' Household Income**

Agriculture income is the total value of farm production in a given period of time, either being sold or not sold. Income can be calculated by multiplying the total number of production with prices prevailing in the market. While farm income is the excess of total farm receipts and expenditures, which total expenditure is the value of all farm inputs that wears out or expended in the production process [24].

According [6], the income can be divided into two agriculture income and household income. Revenue represents a reduction of revenues with total costs. Household income is income derived from farming activities coupled with the income derived from activities outside the farming. Agriculture income is the different from gross income (output) and the cost of production (input) which is calculated in per month, per year, per season. Non agriculture income is the income earned as a result of activities outside of farming such as trade, motorcycle taxi, and so on.

## 2.5. Conceptual Framework

Conceptual framework that developed in this study is expected to describe the research that will be conducted by the researcher as a whole, by understanding, analysing and explaining the influence of farmers behavior of towards farmers household economic incomes through economic decisions on farmers households in Minahasa regency. Framework of this study illustrate the comprehensive paradigm of research methods, which can be described within the framework of the thinking process.

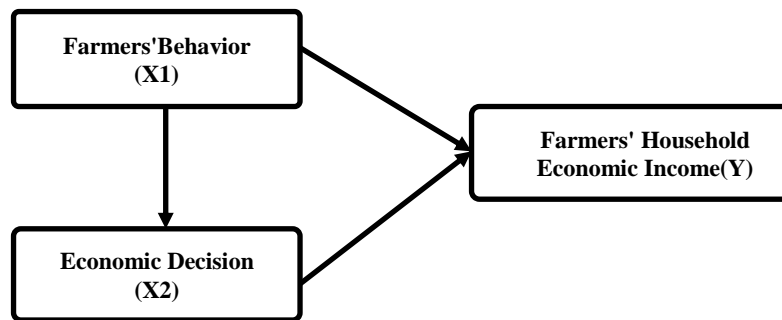


Fig.1. Conceptual Framework Variables

## 2.6. Research Hypothesis

The hypothesis of this research is based on the framework of thought processes and the flow of relationship between variables, which is formulated as follow:

- 1) There is positive effect between farmers' behavior and farmers' economic decision.
- 2) There is positive effect between farmers' behavior and farmers' household income.
- 3) There is positive relationship between farmers' economic decision and farmers' household economic decision.
- 4) There is positive effect between farmers behavior and farmers economic decision through farmers' economic decision.

## III. RESEARCHMETHOD

### 3.1. Research Design

This research is explanatory research that explains the causal relationship between research variables through hypothesis testing [22]. While the approach used in this study is a quantitative approach.

### 3.2. ResearchPlace / Location and Time

This research was conducted in Minahasa Regency. The time of this research is one shoot study or cross sectional, which is the data are collected once in a period of time [21].

### 3.3. Population and Sample

The population of this research was overall farmers' household in Minahasa Regency. In this research, the sample is about 120 respondents, based on the assumptions underlying the tool path analysis (path analysis), i.e a minimum of 100 respondents [18]. Sampling using non-probability sampling approach with the selected type of sampling is purposive sampling or sample aims subjectively [5]. The technique of data collection is done through: a questionnaire, interviews, and literature.

### 3.4. Research Instrument

Variables measuring instrument using a Likert scale, to measure attitudes, opinions and perception of a person or group of events or social phenomena [18].

**3.5. Validity Testing Instrument**

To measure the validity of the formula it is used Pearson Product Moment with the following formula:

$$r_{\text{count}} = \frac{n \sum XiYi - (\sum Xi)(\sum Yi)}{\sqrt{[n \sum Xi^2 - (\sum Xi)^2][n \sum Yi^2 - (\sum Yi)^2]}}$$

By testing the t-test:

$$t = \frac{\sqrt{n-2}}{\sqrt{1-r}} \dots\dots [16]$$

Rule-making:

- if  $t > t_{\text{table}}$  or  $\text{Sig } t < 0.05$ , then invalid.
- If  $t < t_{\text{table}}$  or  $\text{Sig } t > 0.05$ , then invalid.

**3.6. Reliability Test Instruments**

Reliability Instrument test conducted with Cronbach alpha method:

$$R_{11} = \left( \frac{k}{k-1} \right) \left( 1 - \frac{\sum Si}{St} \right) \dots\dots [16]$$

Rule-making:

- If  $R_{11} > 0.6$  means reliable,
- If  $R_{11} < 0.6$  means not reliable

**IV. DATA ANALYSIS AND RESULT**

**4.1. Data Analysis**

**Descriptive Statistics Analysis**

The purpose of using this analysis to reveals a picture of the collected data from the site of the research. Descriptive analysis is useful to support the estimation or the interpretation of analytical results with other techniques.

**Inferential Analysis**

To obtain the representative result of this study, so the data that has been collected has to be processed using appropriate analytical tools. Based on theoretical and conceptual framework along with this research hypothesis, the analysis model used is the path analysis (path analysis), using SPSS 20 software.

**Path Analysis**

The method to analyze the data in this research is path analysis. According to [16] path analysis is used to analyze the model of how the relationships between variables in order to determine the effect of directly or indirectly, a set of exogenous variables on endogenous variables. The path coefficients indicate how much influence change one variable to another variable.

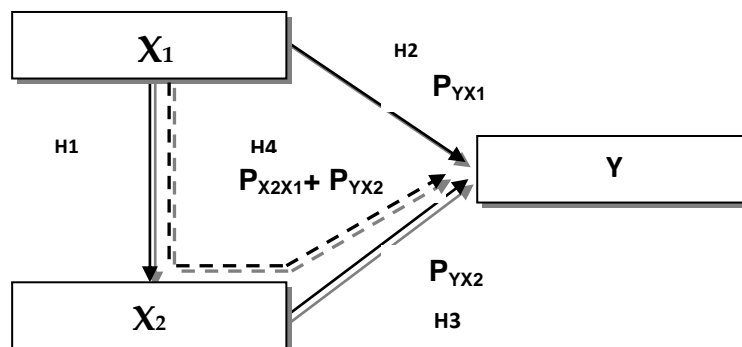


Fig.2. Research Analysis Model

**Hypothesis Testing**

Equations to model the path hypotheses are:

$$\begin{aligned} ZX_2 &= P_{X2X1} ZX_1 + e_1 \\ ZY &= P_{YX1} ZX_1 + P_{YX2} ZX_2 + e_2 \end{aligned}$$

The hypothesis testing is done with the following assumptions:

$H_a$  accepted if  $t_{count} > t_{table}$ , in other words there is the influence of exogenous variables on endogenous variables.

$H_0$  accepted if  $t_{count} < t_{table}$ , in other words no exogenous variables affect the endogenous variables.

The test is performed with a degree of freedom 95%,  $\alpha = 0.05$ .

#### 4.2. Results Analysis

##### Farmers' behavior Variable ( $X_1$ )

From the 12 items statements of farmer behavior variables ( $X_1$ ) it has a correlation value between 0.418 up to 0.842. Of the magnitude of the correlation is obtained  $t_{count}$  and Sig t. Can be seen the entire value  $t_{count} > t_{table}$ , or the Sig t  $< 0.05$  (5% error rate), so that the whole item is valid question. This means that the entire item, valid for subsequent testing.

Reliability test results showed a Cronbach alpha value ( $r_{11}$ ) about 0.876. Because this value is greater than 0.667 so that the instrument for farmers behavior variable ( $X_1$ ) otherwise reliable. This means that all the items for farmers behavior variable is realibel with strong and very strong index for further testing.

##### Economic Decision variables ( $X_2$ )

From the 16 items statements economic decision variables ( $X_2$ ) has a correlation value between 0.310 up to 0.907. Of the magnitude of the correlation is obtained  $t_{count}$  and Sig t. Seen throughout  $t_{count} > t_{table}$  that is about 0.355, or the Sig t  $< 0.05$  (5% error rate). From 16 items questions only items that do not meet the number 1 (0.310  $< 0.355$ ) so that the item is deemed invalid, while 15 other items showed greater results than  $r_{table}$  so that all 15 items declared valid question and further testing can be done.

Reliability test results showed a Cronbach alpha value Guttman Split-Half Coefficient ( $R_{11}$ ) about 0.890. Because this value is greater than 0.667 so that the instrument for economic decision variables ( $X_2$ ) otherwise reliable. This means economic decision variables ( $X_2$ ) is realibel with strong index and very strong for further testing.

##### Farmers Household Economical Income Variable(Y)

From 2 items of household economy income variables statement (Y) has the same correlation value about 0.823. From the magnitude of correlation values obtained  $r_{count}$  and Sig t. Seen entire value  $r_{count} > r_{table}$  or the Sig t  $< 0.05$  (5% error rate), so that the whole question items is valid.

Reliability test results showed a Cronbach alpha value ( $r_{11}$ ) of 0.898. Because this value is greater than 0.667 so that the instrument for household economic income variables (Y) otherwise reliable. This means that items of this variable is valid and reliable, so that testing can be proceeded.

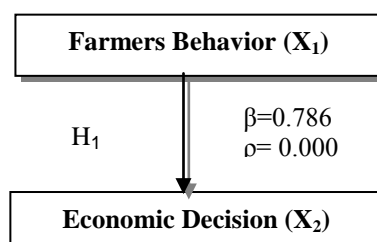
#### Path analysis results

First Equation path analysis( $X_1 - X_2$ )

Independent Variables	Beta	$t_{hitung}$	Sig t
Farmers behavior ( $X_1$ )	0.786	13.826	0.000
$R^2 = 0.618$ ; $t_{table} = 1.981$			
Dependent Variable = Decision Economics ( $X_2$ )			

From the table above, it was concluded that:

- From the  $R^2$  value indicates a value of 0.618 or 61.8%. This means that the Economics Decision ( $X_2$ ) of 61.8% was influenced by Farmer Behavior ( $X_1$ ), and the remaining 38.2% is influenced by other variables exclude the independent variables studied.
- The first equation obtained is:  $ZX_2 = 0.786 ZX_1 + e_1$



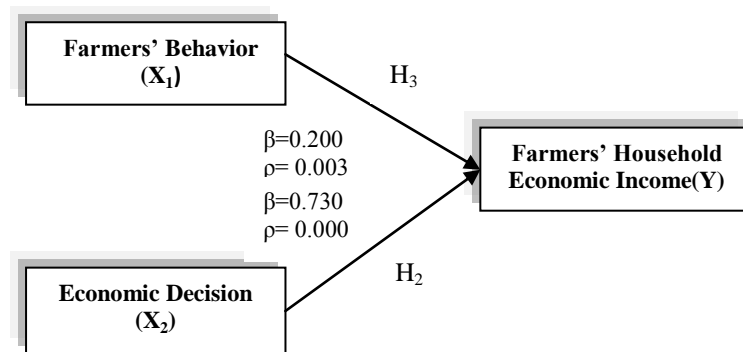
From the above table shows that the magnitude of the path coefficients (beta coefficient results obtained from OLS) about 0.786, with  $t_{count}$  about 13.826 and 0.000 for Sig t. Because  $t_{count} > t_{table}$  ( $13.826 > 1,981$ ) and Sig t  $< 0.05$  ( $0.000 < 0.05$ ), so it can be concluded there are Farmer Behavior ( $X_1$ ) implication to the Economics Decision ( $X_2$ ). Because the path coefficient is positive (0.786) indicate a positive relationship. This means that the higher the farmer behavior variables ( $X_1$ ) the higher the economic decision variables ( $X_2$ ) farmer households in living and effort to fulfill the needs.

Second Line Equation path analysis ( $X_1X_2 - Y$ )

Independent Variables	Beta	$t_{count}$	Sig t
Farmers behavior ( $X_1$ )	0.200	3.001	0.003
Economic Decisions ( $X_2$ )	0.730	10.592	0.000
$R^2 = 0.802$ ; $t_{tabel} = 1.981$ Dependent Variable = RTP Economic Income (Y)			

From the table above, it was concluded that:

- From the  $R^2$  value indicates a value of 0.802 or 80.2%. This means that the farmers' household Economic Income (Y) is influenced by 80.2% by Farmer Behavior ( $X_1$ ) and Economics Decision ( $X_2$ ), the remaining 19.8% is influenced by other variables exclude independent variables studied.
- The second equation obtained is:  $ZX_1 ZY = 0.121 + 0.649 + e2 ZX_2$



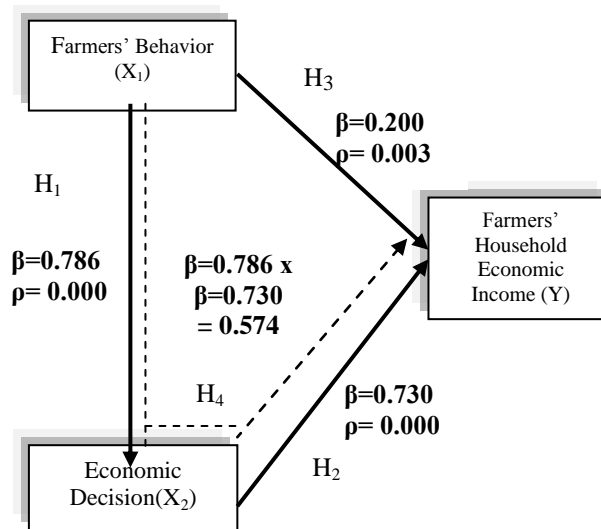
From the above table shows that the magnitude of the path coefficients (obtained from the results of OLS beta coefficient) between the behavior of the farmer ( $X_1$ ) to the economic decision (Y) about 0.200, with a value of  $t_{count}$  of 3.001 and 0.003 for Sig t. Because  $t_{count} > t_{table}$  ( $3.001 < 1.981$ ) and Sig t  $< 0.05$  ( $0.003 > 0.05$ ) so it can be concluded there is influence of farmers' behavior ( $X_1$ ) to household economy income (Y). This means that the increasing of farmers' behavior ( $X_1$ ) will affect the level of income of the household economy (Y).

The magnitude of the path coefficients (obtained from the results of OLS beta coefficient) between economic decisions ( $X_2$ ) to household economy income (Y) by 0.730, with  $t_{count}$  at 10.952 and 0.000 for Sig t. Because  $t_{count} > t_{table}$  ( $10.952 > 1.981$ ) and Sig t  $< 0.05$  ( $0.000 < 0.05$ ), so it can be concluded there are economic decision ( $X_2$ ) implication to household economy income (Y). Because the path coefficient is positive (0.730) indicate a positive relationship. This means that the higher the economic decisions ( $X_2$ ) will be higher the farmers' households economic income (Y).



**Overall Results of Path Analysis**

The results of the path analysis as a whole as follows:



The results of the path analysis showed a significant direct effect ( $\beta = 0.786$ ;  $\rho = 0.000$ ) between Farmers Behavior (X<sub>1</sub>) toward economic decisions (X<sub>2</sub>), and a significant direct effect ( $\beta = 0.730$ ;  $\rho = 0.000$ ) between economic decisions (X<sub>2</sub>) to the Farmers Household economic Income (Y), and the direct effect although the coefficient is not too strong ( $\beta = 0.200$ ;  $\rho = 0.003$ ) between Behavior Farmers (X<sub>1</sub>) to the Farmers Household economic Income (Y), but by putting the economy decision (X<sub>2</sub>) as intervening (indirect influence of behavior of farmers (X<sub>1</sub>) with farmers household economy income (Y) obtained significant results about ( $\beta=0.786 \times \beta=0.730$ ) 0.574

**Hypothesis Testing Results**

In detail, the results of hypothesis testing are presented as follows:

• **Hypothesis Testing H<sub>1</sub>**

The obtained results indicate that the direct effect between the farmer behavior (X<sub>1</sub>) to the economic decision (X<sub>2</sub>) obtained a coefficient of 0.786, with  $t_{count}$  at 13.826 and 0.000 for Sig t. Because  $t_{count} > t_{table}$  ( $13.826 > 1.981$ ) and Sig t  $< 0.05$  ( $0.000 < 0.05$ ), so it can be concluded that there are farmer behavior (X<sub>1</sub>) implications to the economic decision (X<sub>2</sub>). Because the path coefficient is positive (0.786) indicate a positive relationship. This means that the higher the farmers behavior (X<sub>1</sub>) the higher the economic decisions (X<sub>2</sub>).

• **Hypothesis Testing H<sub>2</sub>**

The obtained results indicate that direct influence of the farmer behavior (X<sub>1</sub>) to Farmers household economic income (Y) obtained a coefficient of 0.200, with  $t_{count}$  of 3.001 and Sig t 0.003. Because  $t_{count} > t_{table}$  ( $3.001 > 1.981$ ) and Sig t  $< 0.05$  ( $0.003 < 0.05$ ), so it can be concluded that there are farmers behavior (X<sub>1</sub>) implication to farmers household economic income (Y). This means that the higher the farmers behavior (X<sub>1</sub>) the higher the income of farmers' household economic income (Y).

• **Hypothesis Testing H<sub>3</sub>**

The obtained results indicate that the economic decisions (X<sub>2</sub>) directly affect the farmers' household economic income (Y) with a coefficient of 0.730, with  $t_{count}$  at 10.952 and 0.000 Sig t. Because  $t_{count} > t_{table}$  ( $10.952 > 1.981$ ) and Sig t  $< 0.05$  ( $0.000 < 0.05$ ), so it can be concluded there are economic decision (X<sub>2</sub>) implications to farmers household economic income (Y). Because the path coefficient is positive (0.730) indicate a positive relationship. This means that the higher the economic decisions (X<sub>2</sub>) the higher the farmers' household economic income (Y).

• **Hypothesis Testing H<sub>4</sub>**

The obtained results indicate that indirect effect between the farmer behavior (X<sub>1</sub>) to the farmers' household economic income (Y) through an economic decision (X<sub>2</sub>), the path coefficients obtained from the product of the direct influence of the farmer behavior (X<sub>1</sub>) times the economic decision (X<sub>2</sub>) that is equal to 0.786 with direct influence economic decisions (X<sub>2</sub>) on farmers household economic income (Y) that is equal to 0.730, so that the path coefficient direct influence of  $0.786 \times 0.730 = 0.574$ . Since both the direct path coefficients significant influence, so path coefficients are also significant indirect effect. Because the coefficient is positive (0.574), thus it can be concluded the higher the farmers behavior (X<sub>1</sub>) the higher the farmers household economic income (Y), if the economic decision (X<sub>2</sub>) is also higher.

### **Coefficient of Determination**

Final testing in the path analysis is the validity of the model. In the analysis of the validity of the model path indicator is total determination coefficient obtained as follows:

Coefficient of Total Determination:

$$\begin{aligned}R_{total}^2 &= 1 - Pe_1^2 Pe_2^2 \\R_{total}^2 &= 1 - (1 - R_1^2) (1 - R_2^2) \\R_{total}^2 &= 1 - (0,618) (0,802)\end{aligned}$$

Respectively R square value from first, and second equation model Where  $R_1^2 = 0.618$ , and  $R_2^2 = 0.802$ , to obtain the value of  $R_{total}^2$  0.504 or 50.4%.

From causal relationships between variables in the path diagram obtained about 0.924 coefficient of a total determination or the information contained in the data of 92.4% can be explained by the path model. So that the results of the path analysis is quite feasible to use.

## **V. CONCLUSION**

From the results of the path analysis showed that the farmers behavior directly implicate the economic decisions. With a positive marked on path coefficients showed that the higher the farmers behavior will be higher the economic decisions on farmers' households in Minahasa regency.

This is in line with [12]' research, which revealed that household behavior is a decision maker both production and consumption. Similarly[20], by using the concept of Herbert Simon and embedding aspects of learning, organization; decision-making, and economic behavior, generated as a frame of reference that in the process of economic decision-making is closely related aspects of human behavior that is processed through organizational learning in both formal and non-formal. Also, [19] revealed that the agricultural household models described by the fixed factor and input prices that directly affect Farmers household consumption. From the above statements, it can be illustrated that farmers perceived behavioral factors that influence and contribute to the farmers household in Minahasa regency in economic decision making process both for production and consumption.

From the results of the path analysis showed that the direct effect of farmers behavior towards farmers' household economic income in Minahasa regency has influence and positive relationship, but the effect is so strong that appear less or greater. The result of this analysis is in line with several previous studies that provide revealing the relationship and influence between these two factors, such as: [9], which described using SEM analysis indicated that the farmers' household economic behavior is described by the ability of the family income to finance expenditure in South Sumatra. Similarly [17] and [14], which revealed that the household is an complex economic unit, as the company farm family labor and consumers maximize utility, which further provides contribution for income and satisfaction for farmers households. Likewise [15] on the theory of behavior, which is a positive attitude, knowledge and skills sufficient both provide a good relationship and influence for business individuals or groups (households) in seeking the welfare of his life.

Thus, the relationship of the above study can give an idea that the farmers behavior and farmers' household economy income has interconnections, though less powerful analysis results.

From the results of the path analysis showed that the economic decision directly affects the farmers' household economic income. With a positive marked path coefficients showed that the higher the economic decisions will be higher the farmers' household economic income in Minahasa regency. This is in line with [25] who examined the relationship of households economic decisions of catfish farmers income in Banjar district, South Kalimantan, with 83 households as a sample. The results showed that there is a relationship of economic decisions with increased incomes, catfish, with indicators of an increasing number of production and lower costs, and further improving the welfare of farmers affected by a combination of variables farm extension, the application of agricultural technology, the subsidies the price of feed pellets, and level of farmers education. The same thing by [7] suggested that household consumption expenditure of farmers in the village Ngebrong Tawangsari Pujon, Malang, East Java, with a simultaneous equation analysis of the decision-making process is influenced by farming households, and household income are strongly influenced by household consumption expenditure. As for the other variables that influence is the production, and the allocation of labor.

Thus, the relationship and influence between economic decisions and household economic income of farmers is very important for farmers' households in Minahasa regency, so every household farmers need to pay more attention to the process of achieving goals that have been planned. The Implication of Farmers' Behavior to Farmers' Household Economic Income through Economic Decision From the results of the path analysis showed that farmers behavior by economic decision indirectly strong influence compared directly against Farmers household economic income. By a positive marked path coefficients showed that the higher the farmers' behavior will be higher the farmers' household economic income, if economic decisions are also high.



In this case it can be concluded that economic decisions are intervening variables (intermediate) between the relationship of farmers behavior towards economic income of farmers household in Minahasa regency. This is in accordance with the opinions expressed by ([25],[7],[17],[14], and [20], in which farmers behavior are described as attitudes, knowledge and skills and relationships are very positive influence on economic decisions described as production and consumption, and farmers household economic income that described as revenue within or outside the farm. Thus, both the obtained coefficients and the actual state of the field confirms that all three of these factors have a very close relationship, which can be used as a reference for every farmer households in affording a framework and motivation to achieve a decent life. For the above matters, the writer conclude that either directly or indirectly, a relationship and influence of these three factors, namely the farmers behavior, economic decisions and farmers household economic income in Minahasa regency has a strong bond between the existing factors, so the results are expected continuation of discussion on the above three factors and other factors to be bond to contribute positive for the presence of households

### **Research Implication**

The result of this research is expected to provide useful contribution to farmers household and users and also related parties. The research' result shows both directly or indirectly the farmers' behavior variables significantly implicate to economic decision and economic income of farmers household in Minahasa regency. Farmers behavior that indicated by attitude, knowledge, and skill can provide a reference to the economic decisions to farmers household in Minahasa Regency. From the obtained result indicate significant number of existing between the two variables.

Economic decision is a description of effective decision from production activity and efficient decision from consumption activity. The strategic role of economic decision in this research is significant. It was shown from the obtained result either directly influenced the economic income of farmers household and indirectly of farmers' behavior, so economic decision can be said as variable intervening. By this, to the farmers' household and researcher also government can be consideration.

As a dependent variable, farmers' household economic income plays important role. With two indicators that proposed shows significant result, whether from agriculture income or non-agriculture income.

### **Conclusion and Recommendation**

From the analysis and discussion of this research it can be concluded as follow:

- Farmers' behavior has significant implication to farmers' household economic decision in Minahasa Regency. This result is in line with previous research that stated farmers behavior significantly effect to economic decision ([12]; [20]; [19]). Farmers Behaviors like attitude, knowledge, and farmers' skill gives implication to farmers' household economic decision. It means the higher value of farmers' attitude, the higher value farmers' household economic decision.
- Farmer behavior has an influence on Farmers household economy income, though less so strong. These results explain that both the income earned from farming and non-agriculture influenced by farmers' behavior i.e. attitudes, knowledge, and skills of farmers. This means that by increasing the farmers' behavior value, will provide a positive addition to the farmers household economy income . This is in accordance with the opinion of [9]; [17] and [14]; [15]; [2], which describes that the existence of (rise and fall) of the household income of farmers is determined by the attitudes, knowledge and skills of farmers in managing it.
- Economic decision has a significant influence on the income farmers household economy income. These results are consistent with research findings [25] and [7] which states that the economic decisions have a significant effect farmers household economy income. These results can be explained that the effective production and consumption activities that efficiently provides a significant influence on the formation of household economy income. This means that the higher the value of economic decisions, will also increase the farmers household economy income.
- Economic decisions are placed as intervening in effect farmers behavior and farmers household economy income. This is consistent with studies ([25],[7],[17],[14],[20], [15], and [2]), in which farmers behaviors are described as attitudes, knowledge and skills and relationships are very positively influence on economic decisions described as production and consumption, and Farmers household economic income that are described as revenue within or outside the farm. This means that the high and low values obtained whether farmers behavior on the economy decision and economic decision on farmers household economic income will effect to the farmers household economic income in Minahasa regency.

## VI. RESEARCH LIMITATIONS AND SUGGESTIONS

### Limitation of research

The limitations of this research are as follow:

In determining the sample, the researcher has not making cluster based on region (classifying each region). So, it is not too optimal to generalize them.

The lack of theories and experts' opinions concerning the concepts of farmers' specific behaviors and raw. So it is not really strong in formulating the concept of farmers' behavior.

### Suggestion

Based on the research that has been described in previous chapters, as well as answering the purpose of this study, There are some suggestions that can be expressed in this study are as follows:

For the development of economics and informal education, it can be suggested that the existence of indirect influence among the farmers behavior to farmers' household economic income through economic decisions, it can be consideration for the further research and science development.

For the farmers' household, it can be an evaluation in planning and managing and utilizing research results to be used as guidelines to manage the household.

For Government, and other parties who make the policy, the results of this study can be used as a material consideration in the formulation and evaluation of the concept of economic well-being of the people, especially farmers.

## ACKNOWLEDGEMENTS

I would like to thank Dr. Ferry Ramon Tumiwa for his assistance, editing and suggestions that substantially improved the content of the paper.

## REFERENCES

- [1] Ajzen, I. 1988. "Attitude, Personality, and Behavior". Dorsey, Chicago, I.L
- [2] Ajzen, I. 1991. "The Theory Of Planned Behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp. 179-211
- [3] BPS Data Statistik Indonesia, 2013
- [4] BPS Data Statistik Minahasa Regency, 2013
- [5] Ferdinand, A. 2006. "Metode Penelitian Manajemen: Penelitian Untuk Penulisan Skripsi, Tesis dan Disertasi Ilmu Manajemen". Badan Penerbit Universitas Diponegoro, Semarang.
- [6] Gustiyana, H. 2004. *Analisis Pendapatan Usahatani untuk Produk Pertanian*. Salemba Empat: Jakarta.
- [7] Hanani, N, AR and Yonekura, 2009. Economic Decision Making of Vegetable Peasant Household. <http://ub.ac.id>.
- [8] Hendratno, S (2006). Kompromi Kooperatif dan Alokasi Sumberdaya Intra Rumah Tangga Petani Karet di Sumatera Selatan. *Disertasi Doktor. Sekolah Pascasarjana Intitut Pertanian Bogor*, Bogor.
- [9] Husin, L, 2012. The Rubber Farm Household's Behavior on Economic Activities to Achieve Family Food Security. *APCBEE Procedia, Volume 4, 2012, Pages 169-174. 2nd International Conference on Asia Agriculture and Animal (ICAAA 2012)*. <http://dx.doi.org/10.1016/j.apcbee.2012.11.029>.
- [10] Kusnaedi, N. 2005. Perilaku Ekonomi Rumah Tangga Petani dalam Pasar Persaingan Tidak Sempurna di Beberapa Provinsi di Indonesia. *Disertasi Program Doktor Ilmu Ekonomi Pertanian Sekolah Pascasarjana IPB Bogor*.
- [11] Mardikanto, T. 1996. *Penyuluhan Pembangunan Kehutanan*. Pusat Penyuluhan Kehutanan Departemen Kehutanan Republik Indonesia bekerjasama dengan Fakultas Pertanian UNS. Surakarta.
- [12] Mendola, M. 2007. *Farm household Production Theories: A Review of "Institutional" and "Behavioral" Responses*. Asian Development Review vol.24 no.1. pp 49-68.
- [13] Nakajima, C. 1986. Subjective Equilibrium Theory of The Farm Household, *Elsevier Science Publishers: Amsterdam*, 1986.
- [14] Nakajima, et.al, 2005. Analysis Isoflavone Content in Tempeh, a Fermented Soybean and Preparation of a New Isoflavone-Enriched Tempeh. *J.of Biosci. Bioeng.* 100:685-687.
- [15] Notoatmodjo, S. 2007. *Promosi Kesehatan dan Ilmu Perilaku*. Jakarta : Rineka Cipta
- [16] Riduwan and Kuncoro. (2007). *Cara Menggunakan dan Memakai Analisis Jalur*. Alfabeta, Bandung
- [17] Saliem H.P and Ariningsih E. 2009. *Perubahan Konsumsi dan Pengeluaran Rumah Tangga di Perdesaan: Analisis Data SUSENAS 1999 - 2005 (Consumption Change and Household Expenditure in Rural Areas: Analysis of Susenas Data 1999 - 2005)*. Pusat Analisis Sosial Ekonomi dan Kebijakan Pertanian. [http://pse.litbang.pertanian.go.id/ind/pdf/indfiles/MU\\_Proc\\_2\\_2009](http://pse.litbang.pertanian.go.id/ind/pdf/indfiles/MU_Proc_2_2009).
- [18] Sarwono, J. 2007. *Analisis Jalur Untuk Riset Bisnis Dengan SPSS*. Penerbit Andi, Yogyakarta.
- [19] Sawit, M.H, 1994. Analisis Permintaan Pangan: Bukti Empiris Teori Rumah Tangga Pertanian. *Ekonomi dan Keuangan Indonesia Volume XLII, Nomor 1. 1994*.
- [20] Schwartz, H, 2002. Herbert Simon and Behavioral Economics. *Journal of Socio-Economics 31 (2002) 181-189. Elsevier Science Inc*
- [21] Sekaran, U. 2006. "Research Methods for Business", Buku 1, Edisi 4, Penerjemah Kwan Men Yon, Penerbit Salemba Empat.
- [22] Singarimbundan Effendi, 1995. *Metode Penelitian Survei*. LP3ES. Jakarta
- [23] Singh, I.J, et.al. 1986. *Agricultural Household Models: Extensions, Applications, and Policy*. Published for The World Bank. The John Hopkins University Press, Baltimore.
- [24] Soekartawi, 1988. *Prinsip Dasar Komunikasi Pertanian*. Universitas Indonesia Press. Jakarta
- [25] Sofia, LA, et al 2013. Simulation Model of Household Economy on Production and Welfare of Catfish (Pangasianodon hypophthalmus) Farmer in Banjar Minapolitan, South Kalimantan. *IOSR Journal Of Environmental Science, Toxicology And Food Technology (IOSR-JESTFT)* e-ISSN: 2319-2402, p- ISSN: 2319-2399. Volume 7, Issue 6 (Nov. - Dec. 2013), PP 01-08 [www.iosrjournals.org](http://www.iosrjournals.org)