

The Government Role as Moderation of Farmer Behavior to Meet the Food Need Influence on Farmer's Household Food Security

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ABSTRACT

Food security is one of the strategic issues for developing countries like Indonesia. This issue is also identified to be a crucial factor for countries with agricultural bases. The purpose of this research is to analyze the influence of farmer behavior on household food security with government role as moderation. These three variables will be tested using one of structural equation modeling tools that is WarpPLS with the theoretical basis that is social cognitive theory. One of the differences that will be encountered in this article is the character possessed by the respondent with a sample size of 360 people, where the respondent's character in this area has one type of attitude that makes the relationship between the behavior of farmers to meet food needs and also household food security negative. The results of this study will provide a description of the influence of the government's role on the relationship of these two variables.

Keywords: farmer behavior, food security, social cognitive theory, government role, human empowerment

1. Introduction

Food security is a new policy concept that emerged in 1974 during a world food conference. Maxwell (1996) attempted to trace changes in the definition of food security since the 1974 world food conference

until the mid-decade of the 90s. The change was occurred at global, national, household and individual levels, from a food first perspective from a livelihood perspective and from objective indicators to subjective perceptions (Maxwell and Frankenberger, 1992). Food as a source of nutrients (carbohydrates, fats, proteins, vitamins, minerals and water) becomes the main human foundation to achieve health and well-being throughout the life cycle. The fetus in the womb, infant, toddler, child, adolescent, adult or elderly need them according to nutritional requirement to survive, grow and develop, and achieve work performance. The law No. 18 of 2012 states that food security is a condition of the fulfillment of food for the state up to individuals, which is reflected in the availability of adequate food, both quantity and quality, safe, diverse, nutritious, equitable and affordable in accordance with the beliefs and culture of the community to be

able to live healthy, active and productive on an ongoing basis.

Based on the background above, The purpose of this research is to analyze the influence of farmer behavior on household food security with government role as moderation.

2. Literature Review

Food Security. Maxwell and Slater (2003) describe food security over time and found that discourse on food security is changing so rapidly from the focus on supply and availability to the rights and entitlement perspective. Since the early 1980s the global discourse on food security was dominated by the right to food, risk and vulnerability. The definition of food security changes in each context, time and place, over 200 definitions of food security (FAO 1996 and Maxwell 1996) and at least 450 indicators of food security (Hoddinott, 1999). Food security is a new policy concept that emerged in 1974 during the world food conference. Maxwell (1996) attempted to trace changes in the definition of food security since the 1974 world food conference until the mid-decade of the 90s, change occurred at global, national, household and individual levels, from a food first perspective to From a livelihood perspective and from objective indicators to subjective perceptions (Maxwell and Frankenberger, 1992). Food as a source of nutrients (carbohydrates, fats, proteins, vitamins, minerals and water) becomes the main human foundation to achieve health and well-being throughout the life cycle. The fetus in the womb, infant, toddler, child, adolescent, adult or elderly need the need according to nutritional requirement to survive, grow and develop, and achieve work performance. Law No. 18 of 2012 states that

food security is a condition of the fulfillment of food for the state up to individuals, which is reflected in the availability of adequate food, both quantity and quality, safe, diverse, nutritious, equitable and affordable in accordance with the beliefs and culture of the community to be able to live healthy, active and productive on an ongoing basis.

Thompson and Cowan (2000: 402) note changes in policy and formal definitions of food security in relation to the globalization of trade occurring in some countries. For example, Malaysia redefined food security as self-sufficient 60% of national food. The remaining 40% is obtained from food imports. Malaysia now has a robust food security level. This provides a clear illustration that food security and self-sufficiency are two different things. Indonesia's greatest challenge is that it is not easy to ignore global food trade due to the high level of urbanization coupled with urban poverty, which is in desperate need of cheap food, unless reliance on domestic food production can ensure cheap food prices for the urban poor. But at the same time we must face the way how to protect small and poor farmers from the impact of global food trade. The rising urban population from 15% in 1950 to 46% in 2003, a challenge to the fulfillment of urban food security.

FIVIMS (Food Insecurity and Vulnerability Information and Mapping Systems, 2000) states that food security is a condition where all people at all times physically, socially and economically have access to adequate, nutritious food for dietary needs and choices Food (food preferences) for the sake of an active and healthy life. Food security is a choice of effort that is always based on individual behavior. Warr (2014) distinguishes food security at four

levels, namely (i) global level, food security is defined by whether global supply is sufficient to meet global demand; (ii) national level, food security is based on household level. If households are not food safe, it is difficult to see them safely at the national level; (iii) household level, food security refers to the ability to access food sufficiency at all times. Implied food security is not only the adequacy of food intake today, but also the expectation of future problems and it is not just the current problem; (iv) individual level, food security is the distribution of food to households. When households lack food, individuals will be affected differently. Therefore, the most important thing to note is to focus on individual consumption on the household.

The Role of Government in Fulfillment of Food Needs. The role of government in this research is focused on realizing food security is a step or action of government to provide assistance in the form of basic food (rice) and other social assistance aimed at increasing the income of poor farmers. In the condition of poor communities or farmers lack of basic commodities, the role of the government to provide assistance is highly expected in the research area. The condition occurs during the dry season where rainfed lowland conditions can no longer be cultivated with staple food crops such as rice and maize. Through various international and national agreements, Indonesia has committed and actively participated in various programs related to food security and poverty, among others through the 1996 Rome declaration at the World Food Summit, the Millennium Development Goals Declaration (MDGs) of the year 2000, International Covenant on Economic, Social, and Cultural Rights (ICOSOC) ratified by

Indonesia in Law No. 11 of 2005, Regional ASEAN on the siding of ASEAN Ministers on Agriculture and Forestry (AMAF) in Hanoi in October 2008.

The Indonesia Government seeks to fulfill the MDGs commitment of reducing the proportion of food insecure in the society by half by 2015. However, the current world situation is facing challenges that affect food production, like the less conducive global climate change. Beside that, it is shown that the natural carrying capacity for food production also tends to decrease, such as the availability of fertile land increasingly narrowed as a result of land conversion and environmental degradation resulting in lower productivity and production of agricultural products. Meanwhile, food demand continues to increase along with the rapid population growth rate.

The government role is needed by farmers in rural areas in order to improve the welfare of farmers through the programs that have been done by the government so far in the form of rice assistance for the poor (we call it "raskin"). The term of technical guidance assistance in this research means the guidance through counseling farmers so that farmers can escalate production and also other social assistance such as education assistance, health assistance and many others. The role of government implemented in government policy could be identified about planning, implementation, and evaluation of policies or programs, states that in general the implementation task is to link the realization of public policy objectives with the results of government activities. Implementation tasks include creation of a policy delivery system, designed in a special way and pursued in the hope of achieving that particular goal. So public policy is a broad statement covering

the ideals, goals, and ways embodied in the action program, which is to achieve the goals set in policy. Implementation is a common process of administrative measures that can be researched at a given program level. Grindle (1980) added that the new implementation process will begin if the policy objectives and targets have been established, the program of activities has been prepared, the funds are ready and have been channeled to achieve the target. Grindle (1980) introduced the implementation model as a political and administrative process.

The substance of the general policy of food security consists of important elements that are expected to guide the government, private and community elements to jointly realize food security at the household, regional and national levels. In addition to providing clearer and more digestible policy directions, the government plays a role in elaborating other policies which are capable of providing incentives from upstream to downstream or protection to farmers and consumers alike. Here are some indicators of government's role in overcoming food security: (1) Rice Assistance, government policy in the form of assistance in providing basic commodities such as rice, (2) Social Assistance, government policies include social assistance such as human resource development in the areas of food and nutrition and waiver of outpatient and inpatient fees in some types of health facilities. (3) Technical Guidance, Government policy in the form of human resource development in the field of food and nutrition is done through education, training and counseling more comprehensively

Food Security Subsystem. Food security generally consists of 4 subsystems: food availability, food access, food utilization

and food stability, while nutritional status is an outcome of food security (Weingartner, 2004). Food availability (food availability) is a food security subsystem associated with production systems either own production or local production or supply from outside the region (import). In addition, the food availability of a region can also be generated from household food reserves and assistance from certain parties in the form of food aid. Access availability, and food absorption are aspects that must be fully met. One aspect is not met then a country can not be said to have good food security. Although food is sufficient at the national and regional levels, but if individual access to meet food needs is uneven, then food security is still fragile: a) Food availability which is the availability of food in a sufficiently safe and nutritious quantity for all persons in a country whether from self-production, import, food reserves or food aid. b) Food access, which is the ability of all households and individuals with their owned resources to obtain sufficient food for their nutritional needs that can be obtained from their own food production, purchases or through food aid. Access to households from individuals consists of economic, physical and social access. c) Food Utilization (Webb and Rogers, 2003) which is the use of food for healthy living needs which includes energy and nutritional needs, water and environmental health. d) Food stability which is the time dimension of food security divided into chronic food insecurity and temporary food insecurity.

Hypotheses Development. In explaining the relationship between the behavior of farmers to meet food needs and household food security of farmers, the researchers used basic theories such as social cognitive theory (Bandura, 1986). Social

cognitive theory is a theory that connects human behavior, personal factors, and also environmental influences. These three things are related and reciprocal. Here's an illustration of the picture.

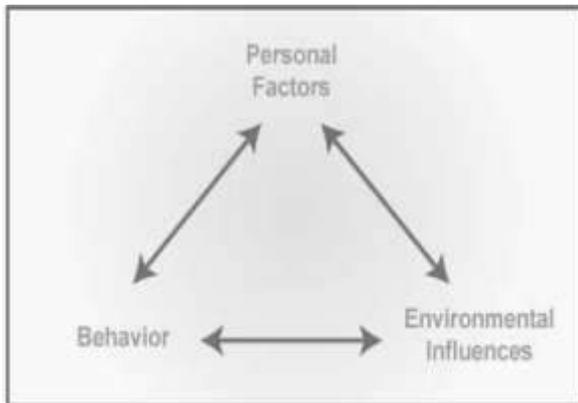


Figure 1
Social Cognitive Theory

Through this theory, researchers can explain that the behavior possessed by individuals can be formed and influenced by several things, where in this context are personal factors and also environmental factors. However, the specialty of this theory is the deliberation of the reciprocal relationship between these three things. Personal factors, environment and behavior, three have reciprocal relationships. This indicates that a built environment can be affected by existing behaviors and also the personal factors possessed by individuals in the environment.

Departing from the social cognitive theory (Bandura, 1986), the researchers make it as the basis for the formation of variables such as household food security of farmers which is a form of agreement or social phenomena within the existing environment whose existence is influenced by factors that are crucial enough such as farmer behavior Meet food needs. In addition to these two variable relationships, the researchers identify that there is crucial enough variable to

influence the relationship of these two variables. The variable that the researcher proposes in influencing the relationship of these two variables is the role of government. The role of government intended in this research is the role of government in realizing food security through the steps or actions of government to provide reliefs such as staple food (rice) and other social assistance aimed at increasing the income of poor farmers. Researchers see that there is an influence given by the government's role on the relationship between farmer behavior to meet food needs and household food security of farmers. When the government establishes certain policies relating to the empowerment of farmers, we believe this will be able to give effect to the relationship of these two variables. In this case, the likelihood of influence given like the government policy will strengthen the relationship between the behavior of farmers to meet food needs and their household food security. From the above argument we can identify that the role of government is one of the things that is crucial in influencing the relationship between farmers behavior to meet food needs (X1) and also household food security of farmers (Y1). Based on the above explanation, the researcher formulates the hypothesis as follows:

H1: Behavior of farmers to meet food needs affects household food security.

H2: The role of government as moderation affects the food security of farm households.

3. Methodology

Research Design. This research uses quantitative approach. This study will use some structured questions (statements) with predefined response options aimed at a large

number of respondents (Burns and Bush, 2014). The purpose of this quantitative research is specific and this research is used when researchers have agreed that they need the necessary information. The data and

source format used is clear and well defined, compiling and formatting the data collected following a neat procedure that is mostly numerical (Burns and Bush, 2014).

the last is hypothesis testing

o	Model fit and quality indices	Result	Status
1	Average path coefficient (APC), $P < 0.05$	0.189; $P < 0.001$	Good
2	Average R-squared (ARS) $P < 0.05$	0.302; $P < 0.001$	Good
3	Average adjusted R-squared (AARS), $P < 0.05$	0.312; $P < 0.001$	Good
4	Average block VIF (AVIF) Acceptable if ≤ 5 , ideally ≤ 3.3	1.297	Good
5	Average full collinearity VIF (AFVIF), Acceptable if ≤ 5 , ideally ≤ 3.3	1.140	Good
6	Tenenhaus GoF (GoF) Small ≥ 0.1 , medium ≥ 0.25 , large ≥ 0.36	0.401	Good
7	Sympson's paradox ratio (SPR) Acceptable if ≥ 0.7 , ideally = 1	1	Ideal
8	R-squared contribution ratio (RSCR) Acceptable if ≥ 0.9 , ideally = 1	1	Ideal
9	Statistical suppression ratio (SSR) Acceptable if ≥ 0.7	1	Good
10	Nonlinear bivariate causality direction ratio (NLBCDR), Acceptable if ≥ 0.7	0.500	Good

. Table 1. Model Fit And Quality Indices On Farmer Behavior Model to Meet Food Need

Analysis Tool. The analysis tool used in this research is WarpPLS. The flow of use of this analytical tool will begin by designing a structural model (inner model) involving several variables involved in this study. Then the next step is to design the measurement model (outer model) followed by constructing the path diagram and convert the path diagram to the system of equations. Furthermore, pengukuran done to determine the value of path coefficient, loading factor, and weight. Which is continued by determining the value of goodness of fit and

4. Result and Discussion

Model Fit And Quality Indices. In the WarpPLS analysis there is a fit model size and quality index to be met, here are the results of the analysis presented in the following table.

Table 2. Validity Test

Variable	Composite Reliability	Cronbach Alpha
Farmer Behavior to Meet Food Need (X1)	0.741	0.689
The Government Role (Z1)	0.859	0.802
Household Food Security of Farmer(Y1)	0.938	0.924
The Government Role (Z1)	0.206	0.795

Table 1 above shows that the overall model is fit, where after testing is done, we can identify that all criteria in the fit and quality indices model are met. In other words, the model is said to be good and can be used to explain the phenomenon studied and can also be used for hypothesis testing. In table 1 above we can see that the value of APC and ARS each has a number of 0.189 and 0.302. This shows that Average Path Coefficient (APC) and Average R-Squared (ARS) meet the fit and quality indices model. Then the AVIF (Averaged block VIF) value also shows a number smaller than 5 that is 1.297. This shows that there is no multicollinearity in the model under study.

Validity Test. The required and tolerable load value is 0.5 to 0.6 (Ghozali, 2011). Actually for the value of validity is considered good enough or ideal has a minimum value of 0.7 (Hair et al., 2009). A model is also said to be capable of having sufficient discriminant validity if the AVE root for each construct is greater than the correlation between konstruk and other constructs. Here are the results of the tests performed.

Table 3. Reliability Test

Variable	X1	X2	X3	X4
Farmer Behavior to Meet Food Need (X1)	0.610	0.223	- 0.583	- 0.253
The Government Role (Z1)	0.223	0.716	0.085	0.533
Household Food Security of Farmer(Y1)	- 0.583	0.085	0.796	0.369
The Government Role (Z1)	- 0.253	0.533	0.369	0.545

In the above table we can identify that the root value of the average variances extracted (AVE) in the numbers with bold print on the

main diagonal of the table, while the number outside the main diagonal is the correlation coefficient between variables. When the AVE root value is greater than the correlation coefficient of that variable with other variables, then it is said that the instrument is valid. The table above shows that the research instrument in the form of questionnaires for all variables is said to be valid.

Reliability Test. The loading values required for a construct to be reliable and meet the rule of thumb are at least 0.7 (Hair et al., 2009). Here are the results of analysis in identifying the reliability value of a construct.

Based on the above table, we identify that the all of those variables show good reliability figures. Thus we can conclude that all indicators of each variable which are farmers' behavior to meet food needs (X1), government role (Z1) and household food resilience of farmers (Y1) are valid and also reliable as a measure of research variables.

Loading Factor. Table 4 shows that the strongest indicator as a measure reflecting the variable of government role (X1) is X1.8 with a factor load of 0.872. Then the strongest indicator as a measure for reflecting the variable of household food security of farmers (Y1) is Y1.8 with a factor load of 0.919 which is almost close to 100 percent. And lastly the strongest indicator as a measure reflecting the government role variable (Z1) is the indicator Z1.6 with a factor load of 0.872. Overall all indicators have a good loading factor.

Table4
Loading Factor of All Variables

Indicator	Loading Factor	P value	Note
X1.1	-0.319	<0.001	
X1.2	-0.237	<0.001	
X1.3	-0.541	<0.001	
X1.4	-0.331	<0.001	
X1.5	-0.598	<0.001	
X1.7	0.816	<0.001	
X1.8	0.872	<0.001	Strongest
X1.9	0.798	<0.001	
Y1.1	0.830	<0.001	
Y1.2	0.859	<0.001	
Y1.3	0.699	<0.001	
Y1.4	0.869	<0.001	
Y1.5	0.778	<0.001	
Y1.6	0.636	<0.001	
Y1.7	0.576	<0.001	
Y1.8	0.919	<0.001	Strongest
Y1.9	0.917	<0.001	
Z1.1	0.667	<0.001	
Z1.2	0.526	<0.001	
Z1.3	0.771	<0.001	
Z1.4	0.535	<0.001	
Z1.5	0.843	<0.001	
Z1.6	0.872	<0.001	Strongest

Hypothesis Testing Results. Farmers behavior to meet food need affects household food security. The results of analysis using WarpPLS obtained coefficient value path marked -0.514 and p-value <0.001 is significant at $\alpha = 0.05$ so that the hypothesis is accepted. The path coefficient is marked negative indicating that farmer behavior to fulfill food requirement at this study is identified that farmer behavior is dominated by nature of qanaah or accepting what God has given them. This character is identified

quite strong when the researchers try to find the reason of this result by doing the in depth interview. This character makes the farmers be surrender of what the God gives to them. After they have worked with all of their

energy they give the result to the God with the result that this character makes the negative effect on household food security of farmaers.

Table 5. Hypothesis Testing Result

Variable Relationship (Independent Variable → Dependent Variable)		Path Coef	P-value
Farmer Behavior to Meet the Food Need (X1)	Household Food Security of Farmers (Y1)	-0,514*	<0,001
The Interaction between Z1 and X1 (Z1*X1)	Household Food Security of Farmers (Y1)	0,191*	<0,001

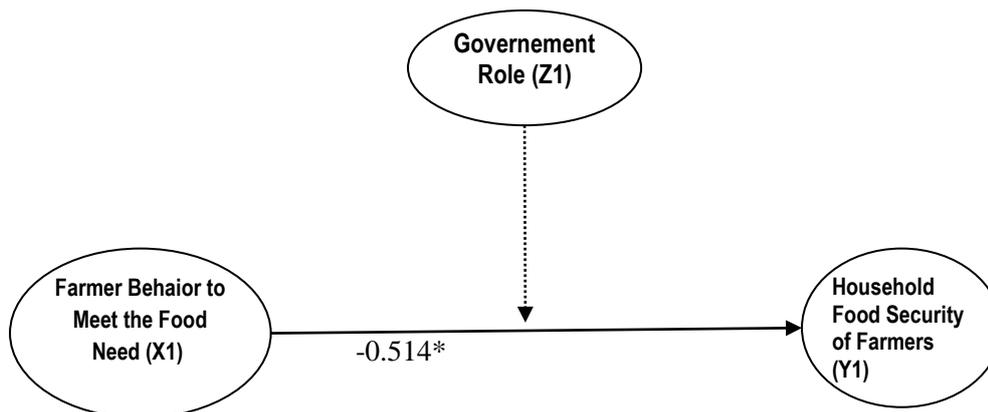


Figure 1. Test Result Model Testing

Description: *** = significant at $\alpha = 0.001$

The role of the government as a moderator variable between the effect of farmers behavior to meet food needs and household food security of farmers. The result of analysis using WarpPLS obtained by coefficient value of interaction between the role of government with farmer behavior to fulfill food requirement on household food resistance of farmer = 0,191 and p-value

<0,001 is significant at $\alpha = 0,05$ so that hypothesis is accepted. On the other hand, the coefficient of pathway of farmer behavior influence to fulfill the need to influence household food security is negative (-0,514) and significant. It shows that the greater the participation of the government, it can change the behavior of farmers to meet food needs in encouraging the realization of household food security of farmers.

5. Conclusion

To realize the food security of farmers, it is necessary some factors to support the realization of food security. One of the identified factors affecting food security is the individual behavior of the farmers themselves in meeting food needs. The researchers identified that the relationship between farmer behavior to meet food needs and household food security of farmers was negative. This can happen because researchers identify in Bangkalan, Madura, farmers possessing one of the predictor characters that affect this relationship which is qona'ah. This nature makes farmers' behavior to meet high food needs to be negative when connected with household food security of farmers.

However, this negative relationship, identified can be minimized by the role of government. The role of the government can be realized in various ways, but in this study researchers are suggesting that the government set policies or programs that can impact on the quality of human resources of farmers themselves, such as socialization of the importance of self-sustainable food, socialization how to realize the independent community in terms of food, and various programs to improve the quality of human resources itself in addition to establishing policies that interfere with the quantity of basic commodities in the market.

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