

FACTORS AFFECTING HOUSEHOLD FOOD SECURITY IN NON-FOOD-CENTER AREAS

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ABSTRACT

Objective: This study aims to determine the factors that affect household food security in non-food center areas in West Kotawaringin Regency, Central Kalimantan Province.

Theoretical Framework: In accordance with sustainability theory. Households that have good livelihood assets can increase household food security, strengthen household livelihood assets, not only increase their resilience to various shocks, but also support overall sustainability goals.

Method: The approach used is quantitative method with data collection through questionnaires and processed using *Smart PLS 3.0 software* to answer research problems and hypotheses. The population in this study were all people in 81 villages and 13 sub-districts in West Kotawaringin Regency total 246,214 people.

Result and Conclusion: Based on quantitative analysis that has been done, it can be concluded that *Human assets, Natural assets, Financial assets, Social assets, Physical assets*, food distribution affect household food security in West Kotawaringin Regency. Government support strengthens household food security in West Kotawaringin Regency.

Implication of research: The research implication is to strengthen the government's role in ensuring food security. Novelty which is a research finding is the variable role of village government in moderating household food security.

Originality/Value: This research is expected to contribute to sustainable theory where society tries to prioritize social responses to environmental and economic problems. It is hoped that this social response will provide food supplies, as well as identifying factors that influence increasing food security.

Keywords: food security, non-food centers, government support.

Received: 09/13/2024

Accepted: 11/15/2024

DOI: <https://doi.org/10.55908/sdgs.v12i12.4134>

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FATORES QUE AFETAM A SEGURANÇA ALIMENTAR DOS AGREGADOS FAMILIARES EM ZONAS NÃO CENTRAIS ALIMENTARES

RESUMO

Objetivo: Este estudo visa determinar os fatores que afetam a segurança alimentar familiar em áreas não-alimentares de centro em West Kotawaringin Regency, Província de Kalimantan Central.

Estrutura Teórica: De acordo com a teoria da sustentabilidade. As famílias que têm bons ativos de subsistência podem aumentar a segurança alimentar das famílias, reforçar os ativos de subsistência das famílias, não só aumentar a sua resiliência a vários choques, mas também apoiar os objetivos gerais de sustentabilidade.

Método: A abordagem utilizada é o método quantitativo com coleta de dados através de questionários e processado usando o software Smart PLS 3.0 para responder a problemas de pesquisa e hipóteses. A população neste estudo era toda de 81 aldeias e 13 sub-distritos em Kotawaringna Regência Ocidental total 246.214 pessoas.

Resultado e Conclusão: Com base na análise quantitativa que foi feita, pode-se concluir que os Ativos Humanos, Ativos Naturais, Ativos Financeiros, Ativos Sociais, Ativos Físicos, Distribuição de Alimentos afetam a segurança alimentar das famílias na Região de West Kotawaring. O apoio do governo fortalece a segurança alimentar doméstica na Regência de West Kotawaringin.

Implicação da pesquisa: A implicação da pesquisa é fortalecer o papel do governo na garantia da segurança alimentar. Novidade, que é um achado de pesquisa, é o papel variável do governo da aldeia na moderação da segurança alimentar doméstica.

Originalidade/valor: Espera-se que esta pesquisa contribua para a teoria sustentável, onde a sociedade tenta priorizar respostas sociais a problemas ambientais e econômicos. Espera-se que esta resposta social forneça alimentos e identifique os fatores que influenciam o aumento da segurança alimentar.

Palavras-chave: segurança alimentar, centros não-alimentares, apoio do governo.

FACTORES QUE AFECTAN A LA SEGURIDAD ALIMENTARIA DE LOS HOGARES EN LAS ZONAS NO ALIMENTARIAS

RESUMEN

Objetivo: El objetivo de este estudio es determinar los factores que afectan la seguridad alimentaria de los hogares en las zonas de centros no alimentarios de Kotawaringin Occidental, en Regency, provincia de Kalimantan Central.

Marco teórico: De acuerdo con la teoría de la sostenibilidad. Los hogares que tienen buenos medios de subsistencia pueden aumentar la seguridad alimentaria de los hogares, fortalecer los medios de subsistencia de los hogares, no sólo aumentar su resistencia a diversas perturbaciones, sino también apoyar los objetivos generales de sostenibilidad.

Método: El enfoque utilizado es el método cuantitativo con la recogida de datos a través de cuestionarios y procesados utilizando el software Smart PLS 3.0 para responder a problemas e hipótesis de investigación. La población en este estudio era toda la gente en 81 aldeas y 13 sub-distritos en Kotawaring Occidental en Regencia total 246,214 personas.

Resultado y conclusión: Sobre la base del análisis cuantitativo que se ha hecho, se puede concluir que los activos humanos, los activos naturales, los activos financieros, los activos



sociales, los activos físicos y la distribución de alimentos afectan a la seguridad alimentaria de los hogares en Kotawaringin Occidental, en la Regencia. El apoyo del Gobierno fortalece la seguridad alimentaria de los hogares en Kotawaringin Occidental, en la Regencia.

Implicación de la investigación: La investigación tiene como consecuencia fortalecer el papel del gobierno en garantizar la seguridad alimentaria. La novedad, que es un hallazgo de investigación, es el papel variable del gobierno de la aldea en la moderación de la seguridad alimentaria de los hogares.

Originalidad/Valor: Se espera que esta investigación contribuya a la teoría sostenible, donde la sociedad trata de priorizar las respuestas sociales a los problemas ambientales y económicos. Se espera que esta respuesta social proporcione suministros de alimentos, así como la identificación de los factores que influyen en el aumento de la seguridad alimentaria.

Palabras clave: seguridad alimentaria, centros no alimentarios, apoyo gubernamental.

1 INTRODUCTION

Based on data from the *Global Food Safety Initiative (GFSI)*, Indonesia's food security index in 2022 was 60.2 or 63rd out of 113 countries. This figure is still below the world average index of 62.2 and Asia Pacific of 63.42. Factors affecting food security according to UNICEF include uneven food availability throughout the year; unequal food affordability over time and between regions; food consumption that is not yet diverse, nutritionally balanced and safe; inadequate food logistics systems; low farmer exchange rates; declining agricultural land area; unintegrated food security policies; poor food diversification and the quality of distribution infrastructure.

In Asia and the Pacific, Indonesia ranks 10th with a total score of 67.9. Of the four indicators, three are still unsatisfactory, namely *Availability* or food access (50.9), *Quality and Safety* or food quality and safety level (56.2) and *Sustainability and Adaptation* or climate change sustainability and *adaptation* issues (46.3). This means that the weakest point for Indonesia in terms of food is anticipating climate change on national food security. At the world level, Indonesia ranks 63 out of 113 countries.

The results of the FSVa analysis showed that there were 39 out of 94 villages that were food insecure (41.49%). South Arut Sub-district, Kumai Sub-district and South Arut Sub-district are villages with high food and nutrition insecurity.

Based on these problems, this research tries to identify the factors that affect household food security in West Kotawaringin District and the strategies that can be carried out in the future.



This research is expected to strengthen the *sustainable theory*. *sustainable theory* was first proposed by Meadows et al, (1972) which explains community efforts to prioritise social responses to environmental and economic problems. This social response is expected to fulfil the needs of the present and future generations (WCED, 1987). In addition, this research can strengthen the *welfare state theory* where the government is considered to play an important role in ensuring the welfare of every citizen.

The research uses the analytical of *welfare state theory*, where the government is responsible for the welfare and prosperity of its people (Bentham, 1996: 17). Based on empirical studies conducted, it is found that food security affects people's welfare (Laborde *et al.*, 2021; Kornher and Sakketa 2021; Njeri 2021). In addition, it was also found that government support, which if drawn to the research problem, is the performance of the government in the welfare of the community (Lai *et al.*, 2020; Paais and Pattiruhu, 2020; Piedade *et al.*, 2021). logically, if the per capita income is high, the employment of the head of the household is broad, the education of the head of the household is high and strengthened by government support, it has the potential to increase food security.

1.1 PROBLEM FORMULATION

Based on the research problem, namely the low food self-sufficiency and household food security in West Kotawaringin Regency, Central Kalimantan Province, the problem formulation in this study is as follows:

1. Do *human assets* affect household food security in West Kotawaringin Regency, Central Kalimantan Province?
2. Do *natural assets* affect household food security in West Kotawaringin district, Central Kalimantan Province?
3. Do *financial assets* affect household food security in West Kotawaringin district, Central Kalimantan province?
4. Do *social assets* affect household food security in West Kotawaringin District, Central Kalimantan Province?
5. Do *physical assets* affect household food security in West Kotawaringin District, Central Kalimantan Province?



6. Does food distribution affect household food security in West Kotawaringin District, Central Kalimantan Province?
7. Does government support moderate the effect of *human assets* on household food security in West Kotawaringin District, Central Kalimantan Province?
8. Does government support moderate the effect of *natural assets* on household food security in West Kotawaringin District, Central Kalimantan Province?
9. Does government support moderate the effect of *financial assets* on household food security in West Kotawaringin Regency, Central Kalimantan Province?
10. Does government support moderate the effect of *social assets* on household food security in West Kotawaringin Regency, Central Kalimantan Province?
11. Does government support moderate the effect of *physical assets* on household food security in West Kotawaringin Regency, Central Kalimantan Province?
12. Does government support moderate the effect of food distribution on household food security in West Kotawaringin Regency, Central Kalimantan Province?

1.2 RESEARCH OBJECTIVES

This research aims to develop *welfare state theory* and *sustainable theory* related to *human assets*, *natural assets*, *financial assets*, *social assets*, *physical assets*, food distribution and government support to improve household food security in West Kotawaringin District. West Kotawaringin Regency. In addition, it is also to test and analysis:

1. The influence of *human assets* on household food security in West Kotawaringin District, Central Kalimantan Province.
2. The effect of *natural assets* on household food security in West Kotawaringin Regency, Central Kalimantan Province.
3. The effect of *financial assets* on household food security in West Kotawaringin Regency, Central Kalimantan Province.
4. The effect of *social assets* on household food security in West Kotawaringin Regency, Central Kalimantan Province.
5. The effect of *physical assets* on household food security in West Kotawaringin Regency, Central Kalimantan Province.



6. The effect of food distribution on household food security in West Kotawaringin District, Central Kalimantan Province.
7. The effect of government support moderates *human assets* on household food security in West Kotawaringin District, Central Kalimantan Province.
8. The effect of government support moderates *natural assets* on household food security in West Kotawaringin Regency, Central Kalimantan Province.
9. The effect of government support moderates *financial assets* on household food security in West Kotawaringin Regency, Central Kalimantan Province.
10. The effect of government support moderates *social assets* on household food security in West Kotawaringin Regency, Central Kalimantan Province.
11. The effect of government support moderates *physical assets* on household food security in West Kotawaringin district, Central Kalimantan Province
12. The effect of government support moderates food distribution on household food security in West Kotawaringin Regency, Central Kalimantan Province.

2 METHODOLOGY

To achieve the research objectives and prove the hypothesis, this research uses a *quantitative* method approach. Data obtained through questionnaires were tabulated, processed using *SmartPLS 3.0 software* to answer research problems and hypotheses. The population in this study were all people in 81 villages and 13 sub-districts in West Kotawaringin Regency total 246,214 people. The sample also looks at characteristics such as age, gender, education and tenure to help analysis the discussion. The reason for taking the population of all communities in West Kotawaringin Regency is because researchers can access all populations well.

$$n = N / (1 + (N \times e^2)) \quad (1)$$

Notes:

n = Number of samples

N = Total population

e² = Margin of Error

n = 246,214 / (1 + (246,214 x 0.052))

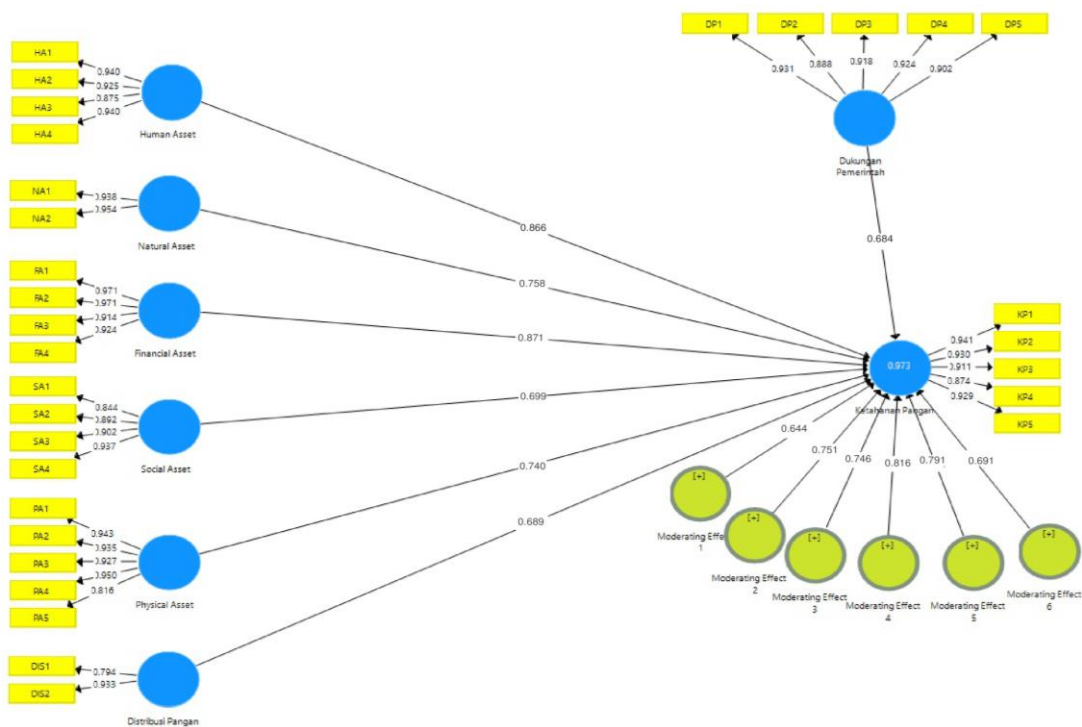


n = 400 people after obtaining a sample of 400 people, then allocated to 94 villages in West Kotawaringin Regency.

The research population was 246,214 people in West Kotawaringin Regency. Determination of the sample size in this study using the Slovin formula by calculating the sample size as follows. Sugiyono, (2017: 149):

Figure 1

Research Model Path Diagram



Source: Processed with SmartPLS

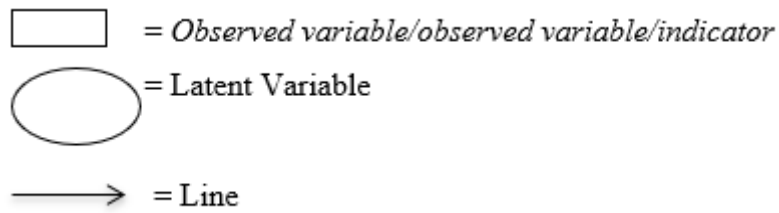
2.1 STRUCTURAL MODEL EQUATION

The following is the research structural model equation.

$$\begin{aligned}
 KP &= 0.866HA + 0.758NA + 0.874FA + 0.699SA + 0.740PA + 0.684DP + 0.644HA * DP + 0.751 \\
 NA * DP &+ 0.746FA * DP + 0.816SA * DP + 0.791PA * DP + 0.691DIS * DP + e \quad (2)
 \end{aligned}$$



Notes:



KP: Household Food Security

NA : *Natural asset*

FA : *Financial asset*

SA : *Social asset*

PA : *Physical asset*

DP : Government support

HA*DP : Moderation 1

NA*DP : Moderation 2

FA*DP : Moderation 3

SA*DP : Moderation 4

PA*DP : Moderation 5

DIS*DP : Moderation 6

E : *Measurement Error*

The regression coefficient numbers in the equation are obtained from *SmartPLS* processing results from convergent validity, namely the value of *outer loadings*.

2.2 MEASUREMENT MODEL EQUATION

The following is the research measurement model equation.

1. Household Food Security Variable (KP)

$$KP1 = 0.941KP + e$$

$$KP2 = 0.930KP + e$$

$$KP3 = 0.911KP + e$$

$$KP4 = 0.874KP + e$$

$$KP5 = 0.929KP + e$$



2. *Human Asset Variable (HA)*

$$HA1 = 0.898HA + e$$

$$HA2 = 0.894HA + e$$

$$HA3 = 0.921HA + e$$

$$HA4 = 0.695HA + e$$

3. *Natural Asset (NA) Variable*

$$NA1 = 0.938NA + e$$

$$NA2 = 0.954NA + e$$

4. *Variable Financial Asset (FA)*

$$FA1 = 0.971FA + e$$

$$FA2 = 0.971FA + e$$

$$FA3 = 0.914FA + e$$

$$FA4 = 0.924FA + e$$

5. *Social Asset (SA) Variable*

$$SA1 = 0.844SA + e$$

$$SA2 = 0.892SA + e$$

$$SA3 = 0.902SA + e$$

$$SA4 = 0.937SA + e$$

6. *Physical Asset (PA) variable*

$$PA1 = 0.943SA + e$$

$$PA2 = 0.935SA + e$$

$$PA3 = 0.927SA + e$$

$$PA4 = 0.950SA + e$$

7. *Government Support Variable (DP)*

$$DP1 = 0.931DP + e$$

$$DP2 = 0.888DP + e$$

$$DP3 = 0.918DP + e$$

$$DP4 = 0.924DP + e$$

$$DP5 = 0.902DP + e$$

8. *Food Distribution Variable (DIS)*

$$DIS = 0.794DIS + e$$

$$DIS = 0.933DIS + e$$



2.3 CONVERGENT VALIDITY

Convergent validity can be seen from the *outer loading* and *average variance extraced (AVE)* values. The following is the *outer loading* of variable indicators in Table 4.47.

Tabel 1

Outer Loading Value

Variabel	Indikator	Factor Loading
Food security (KP)	Food Availability (KP1)	0.941
	Food Access (KP2)	0.930
	Food utilization (KP3)	0.911
	Agency (KP4)	0.874
	Sustainability (KP5)	0.929
Human Asset (HA)	Public health (HA1)	0.940
	Last education (HA2)	0.925
	Training & Job Skills (HA3)	0.875
	Community Skills (HA4)	0.940
Natural Asset (NA)	Agricultural Productivity (NA1)	0.938
	Land Ownership (NA2)	0.954
Financial Asset (FA)	Community Income (FA1)	0.971
	Savings Ownership (FA2)	0.971
	Investment Ownership (FA3)	0.914
	Access to borrow/debt (FA4)	0.924
Physical Asset (PA)	Living conditions (PA1)	0.943
	Vehicle Ownership (PA2)	0.935
	Road access conditions (PA3)	0.927
	Water access conditions (PA4)	0.950
	Sanitary access conditions (PA5)	0.816
Social Asset (SA)	Level of community welfare (SA1)	0.844
	Kinship relations (SA2)	0.892
	Community Participation (SA3)	0.902
	Community Social Network (SA4)	0.937
Food Distribution (DIS)	Distribution Channels (DIS1)	0.794
	Physical Flow Distribution Activities of Food Goods (DIS2)	0.933
Government Support (DP)	Agricultural Productivity (DP1)	0.931
	Coaching (DP2)	0.888
	Job Networking (DP3)	0.918
	Commitment of all stakeholders (DP4)	0.924
	Village Authority (DP5)	0.902

Source: Processed with Smart PLS

Table 1 shows that the *outer loading* for all variables is greater than 0.7, which means that all indicators can be said to fulfil convergent validity. The following table 2 explains the *average variance extracted (AVE)*:



Tabel 2

Average Variance Extracted (AVE)

Variable	Average Variance Extracted
Food Security	0.841
Human Asset	0.847
Natural Asset	0.895
Financial Asset	0.894
Social Asset	0.800
Physical Asset	0.838
Food Distribution	0.751
Government Support	0.833

Source: Processed with Smart PLS

Table 2 shows that the *average variance extracted* value > 0.5 so that it can be stated that it has good validity, meaning that the amount of variance that can be contained by the latent variable construct is good.

2.4 DISCRIMINANT VALIDITY

Discriminant validity test is carried out to ensure that variables are not correlated with each other and measure different constructs. To measure discriminant validity, calculations are carried out using the *cross loading* value and the *Fornell-Larcker* Test. The following are the results of the discriminant validity test in table 3

Tabel 3

Nilai Cross Loading

	Dis	DP	HA	FA	KP	ME1	ME2	ME3	ME4	ME5	ME6	NA	PA	SA
DIS1	0.794	0.515	0.555	0.538	0.439	-0.486	-0.427	-0.505	-0.488	-0.476	-0.264	0.459	0.499	0.533
DIS2	0.933	0.737	0.797	0.791	0.743	0.597	0.581	0.595	0.554	-0.572	0.391	0.740	0.737	0.759
DP1	0.712	0.931	0.930	0.952	0.935	-0.685	-0.684	-0.692	-0.655	-0.676	-0.635	0.843	0.914	0.941
DP2	0.677	0.888	0.890	0.919	0.908	0.667	-0.684	-0.671	-0.581	-0.689	-0.580	0.863	0.941	0.863
DP3	0.681	0.918	0.803	0.812	0.779	-0.791	-0.722	-0.805	-0.789	-0.744	-0.723	0.684	0.760	0.888
DP4	0.703	0.924	0.828	0.832	0.791	-0.785	-0.717	-0.799	-0.784	-0.739	-0.719	0.700	0.774	0.899
DP5	0.620	0.902	0.775	0.809	0.926	-0.641	-0.622	-0.635	-0.651	-0.618	-0.587	0.716	0.809	0.900
DIS*D P	0.390	0.706	0.627	0.655	0.619	0.917	0.826	0.917	0.897	0.851	1.000	-0.574	-0.627	-0.694
FA1	0.769	0.923	0.971	0.957	0.926	-0.701	-0.689	-0.722	-0.647	-0.712	-0.602	0.884	0.960	0.924
FA2	0.722	0.897	0.971	0.953	0.912	-0.617	-0.632	-0.636	-0.558	-0.605	-0.565	0.879	0.931	0.906
FA3	0.730	0.818	0.914	0.883	0.741	-0.622	-0.514	-0.662	-0.612	-0.615	-0.593	0.795	0.791	0.841
FA4	0.815	0.867	0.924	0.937	0.859	-0.685	-0.671	-0.681	-0.672	-0.696	-0.616	0.868	0.845	0.891
FA*D P	0.637	0.784	0.714	0.734	0.700	0.986	0.897	1.000	0.952	0.941	0.917	-0.655	-0.729	-0.772
HA1	0.710	0.896	0.924	0.940	0.909	0.647	0.644	-0.647	-0.621	-0.636	-0.592	0.827	0.890	0.915
HA2	0.683	0.883	0.898	0.925	0.911	-0.660	-0.681	-0.661	-0.574	-0.684	-0.567	0.869	0.943	0.863
HA3	0.710	0.839	0.894	0.875	0.745	0.662	-0.550	-0.704	-0.649	-0.655	-0.628	0.790	0.792	0.851
HA4	0.814	0.881	0.921	0.940	0.862	-0.707	-0.684	-0.700	-0.696	-0.713	-0.634	0.866	0.845	0.901



HA*D	0.630	0.777	0.695	0.726	0.697	1.000	0.916	0.986	0.966	0.955	0.917	-0.649	-0.723	-0.764
P														
KP1	0.642	0.904	0.802	0.828	0.941	-0.632	-0.622	-0.628	-0.639	-0.616	-0.580	0.739	0.828	0.908
KP2	0.713	0.917	0.931	0.950	0.930	-0.671	-0.675	-0.674	-0.640	-0.665	-0.613	0.844	0.910	0.930
KP3	0.683	0.883	0.898	0.925	0.911	-0.660	-0.681	-0.661	-0.574	-0.684	-0.567	0.869	0.943	0.863
KP4	0.618	0.786	0.784	0.775	0.874	-0.589	-0.573	-0.609	-0.533	-0.537	-0.490	0.704	0.906	0.784
KP5	0.614	0.894	0.770	0.803	0.929	-0.640	-0.619	-0.635	-0.645	-0.625	-0.585	0.706	0.810	0.889
NA1	0.706	0.781	0.836	0.832	0.736	-0.656	-0.640	-0.682	-0.635	-0.681	-0.579	0.938	0.794	0.844
NA2	0.662	0.805	0.879	0.889	0.853	-0.579	-0.589	-0.567	-0.542	-0.590	-0.512	0.954	0.859	0.841
NA*D	0.594	0.749	0.667	0.698	0.692	0.916	1.000	0.897	0.899	0.887	0.826	-0.647	-0.713	-0.739
P														
PA1	0.683	0.883	0.898	0.925	0.911	-0.660	-0.681	-0.661	-0.574	-0.684	-0.567	0.869	0.943	0.863
PA2	0.643	0.820	0.801	0.802	0.901	-0.662	-0.657	-0.667	-0.625	-0.638	-0.559	0.737	0.935	0.823
PA3	0.624	0.822	0.780	0.787	0.896	-0.676	-0.671	-0.682	-0.638	-0.651	-0.570	0.725	0.927	0.819
PA4	0.697	0.886	0.909	0.934	0.916	-0.670	-0.691	-0.666	-0.592	-0.699	-0.577	0.876	0.950	0.872
PA5	0.738	0.828	0.918	0.894	0.758	-0.649	-0.554	0.671	-0.655	-0.661	-0.610	0.809	0.816	0.857
PA*D	0.608	0.757	0.696	0.729	0.683	0.955	0.887	0.941	0.939	1.000	0.851	-0.668	-0.727	-0.752
P														
SA1	0.717	0.774	0.846	0.838	0.729	-0.643	-0.619	-0.666	-0.627	-0.662	-0.567	0.938	0.789	0.844
SA2	0.681	0.919	0.799	0.812	0.782	-0.808	-0.742	-0.815	-0.814	-0.770	-0.738	0.686	0.764	0.892
SA3	0.640	0.901	0.804	0.827	0.941	-0.608	-0.597	0.611	0.606	-0.584	-0.559	0.737	0.824	0.902
SA4	0.715	0.922	0.927	0.950	0.932	-0.693	-0.698	-0.690	0.670	-0.694	-0.633	0.844	0.913	0.937
SA*D	0.601	0.752	0.657	0.687	0.661	0.966	0.899	0.952	1.000	0.939	0.897	0.618	0.671	0.754
P														

Source: Processed with SmartPLS

Notes:

Dis = Food Distribution

DP = Government Support

HA = *Human Asset*

NA = *Natural Asset*

FA = *Financial Asset*

SA = *Social Asset*

PA = *Physical Asset*

KP = Food Security.

Table 3 shows that all variable indicators have a *cross loading* value >0.5 , meaning that each indicator is not correlated and measures different constructs. The following are the results of the discriminant validity test using the *Fornell-Larcker* test in Table 4.



Table 4

Fornell-Larcker Criterion Test Results

	Dis	DP	HA	FA	KP	ME1	ME2	ME3	ME4	ME5	ME6	NA	PA	SA
Dis	0.867													
DP	0.743	0.913												
FA	0.802	0.929	0.945											
HA	0.791	0.951	0.987	0.920										
KP	0.714	0.957	0.914	0.935	0.917									
Moderating Effect 1	0.630	0.777	0.695	0.726	0.697	1.000								
Moderating Effect 2	0.594	0.749	0.667	0.698	0.692	0.916	1.000							
Moderating Effect 3	0.637	0.784	0.714	0.734	0.700	0.986	0.897	1.000						
Moderating Effect 4	0.601	0.752	0.657	0.687	0.661	0.966	0.899	0.952	1.000					
Moderating Effect 5	0.608	0.757	0.696	0.729	0.683	0.955	0.887	0.941	0.939	1.000				
Moderating Effect 6	0.390	0.706	0.627	0.655	0.619	0.917	0.826	0.917	0.897	0.851	1.000			
NA	0.721	0.839	0.907	0.911	0.844	0.649	0.647	0.655	0.618	0.668	0.574	0.946		
PA	0.736	0.925	0.937	0.946	0.959	0.723	0.713	0.729	0.671	0.727	0.627	0.876	0.916	
SA	0.766	0.985	0.943	0.959	0.955	0.764	0.739	0.772	0.754	0.752	0.694	0.890	0.923	0.894

Source: Processed with SmartPLS

Table 4. shows that the construct correlation, the association is higher than the other constructs, so it can be said that the model has good discriminant validity.

2.5 COMPOSITE RELIABILITY

Reliability testing in PLS can use two methods, namely *Cronbach's alpha* and *composite reliability*. *Cronbach's alpha* measures the lower limit of reliability value while *composite reliability* measures the true value of a construct's reliability (Chin, 1995). *Composite reliability* is considered better in estimating the internal consistency of a construct. The rule of thumb for *Cronbach's alpha* and *composite reliability* values must be greater than 0.70 although a value of 0.60 is still acceptable (Hair et al., 2010). The following are the results of calculating *Cronbach's alpha* and *composite reliability* on the research variables:



Table 5

Composite Reliability and Cronbach's Alpha Results

Variable	Cronbach's Alpha	Composite Reliability
Food Security	0.953	0.964
Human Asset	0.939	0.957
Natural Asset	0.883	0.897
Financial Asset	0.960	0.968
Social Asset	0.916	0.928
Physical Asset	0.951	0.956
Food Distribution	0.860	0.819
Government Support	0.950	0.953

Source: Processed with SmartPLS

Table 5 shows that the *Cronbach's alpha* and *composite reliability* values for all variable constructs each have a value greater than 0.60, thus the research model constructs formed are reliable / reliable.

2.6 STRUCTURAL MODEL EVALUATION

The R2 results of 0.67, 0.33 and 0.19 for endogenous variables in the structural model indicate that the model is 'good', 'moderate' and 'weak' (Ghozali and Latan 2015: 139). Based on data processing with PLS, the resulting coefficient of determination (*R-Square*) value is as follows:

Table 6

R-Square Value

Variable	R Square
Food Security	0.960

Source: Processed with SmartPLS

Goodness of fit in the PLS model can be seen from the R^2 value, the higher the R^2 , the more *fit* the model can be said to be. The results of the calculation of R^2 food security variables show a value of 0.960 greater than 0.67, meaning that the amount of diversity of the research data can be explained by the structural model well because the *R-Square* value is above 0.67.



3 RESULT AND DISCUSSION

After analysis the coefficient of influence between variables, the next step is to test the hypothesis using the *t-statistics* value. The parameter of whether there is a partial influence can be known based on the *t-statistics* value which must be greater than 1.96, so there is an influence of exogenous variables on endogenous variables or endogenous variables on endogenous variables. Conversely, if the *t-statistics* value is smaller than 1.96, there is no effect of exogenous variables on endogenous variables or endogenous variables on endogenous variables. If *P values* <0.05 means significant and if *P values* >0.05 means insignificant. The following hypothesis testing results are in table 7

Table 7

Hypothesis Testing Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Human Asset -> Ketahanan Pangan	0.866	0.855	0.482	2.325	0.001
Natural Asset -> Ketahanan Pangan	0.758	0.750	0.181	2.328	0.017
Financial Asset -> Ketahanan Pangan	0.874	0.870	0.435	2.135	0.014
Social Asset -> Ketahanan Pangan	0.699	0.670	0.451	2.012	0.010
Physical Asset -> Ketahanan Pangan	0.740	0.380	0.256	2.567	0.018
Distribusi Pangan -> Ketahanan Pangan	0.689	0.601	0.301	2.123	0.012
Dukungan Pemerintah -> Ketahanan Pangan	0.684	0.680	0.404	2.132	0.013
Moderating Effect 1 -> Ketahanan Pangan	0.644	0.640	0.623	2.325	0.055
Moderating Effect 2 -> Ketahanan Pangan	0.751	0.749	0.181	2.333	0.011
Moderating Effect 3 -> Ketahanan Pangan	0.746	0.740	0.670	2.325	0.015
Moderating Effect 4 -> Ketahanan Pangan	0.816	0.810	0.322	2.358	0.001
Moderating Effect 5 -> Ketahanan Pangan	0.791	0.710	0.333	2.398	0.013
Moderating Effect 6 -> Ketahanan Pangan	0.691	0.680	0.405	2.326	0.017

Source: Processed with SmartPLS

Table 6 shows the results of hypothesis testing which can be explained as follows:

1. Hypothesis testing to 1



The magnitude of the influence of the *human asset* variable on household food security is 0.866 with a *P Value* <0.05 so it can be concluded that the *human asset* variable has a positive and significant effect on the household food security variable in West Kotawaringin Regency (H1 accepted).

2. Hypothesis testing 2

The magnitude of the effect of the *natural asset* variable on the household food security variable is 0.758 with a *P Value* <0.05 so it can be concluded that the *natural asset* variable has a positive and significant effect on the food security variable in West Kotawaringin (H2 accepted).

3. Hypothesis testing to 3

The magnitude of the influence of the *financial asset* variable on food security is 0.871 with a *P Value* <0.05 so it can be concluded that the *financial asset* variable has a positive and significant effect on the household food security variable in West Kotawaringin Regency (H3 accepted).

4. Hypothesis testing to 4

The magnitude of the influence of *social asset* variables on household food security is 0.699 with a *P Value* <0.05 so it can be concluded that *social asset* variables have a positive and significant effect on household food security variables in West Kotawaringin Regency (H4 accepted).

5. Hypothesis testing to 5

The magnitude of the influence of the *physical asset* variable on food security is 0.740 with a *P Value* <0.05 so it can be concluded that the *physical asset* variable has a positive and significant effect on the household food security variable in West Kotawaringin Regency (H5 is accepted).

6. Hypothesis testing 6

The magnitude of the effect of food distribution variables on household food security is 0.689 with a *P Value* <0.05 so it can be concluded that food distribution variables have a positive and significant effect on household food security variables in West Kotawaringin Regency (H6 accepted).

7. Hypothesis testing to 7

The magnitude of the interaction effect of government support and *human assets* on household food security is 0.644 with a *P-value* <0.05 so it can be concluded that government support moderates the effect of *human assets* on household food security in



West Kotawaringin Regency (H7 accepted). The results of hypothesis testing state that the direct effect of *human assets* on household food security is significant and the interaction of moderating variables is also significant, so it can be classified as a quasi moderating variable.

8. Hypothesis testing 8

The magnitude of the interaction effect of government support and *natural assets* on household food security is 0.751 with a *P-value* <0.05 so it can be concluded that government support moderates the effect of *natural assets* on household food security in West Kotawaringin Regency (H8 accepted). The results of hypothesis testing state that the direct effect of *natural assets* on household food security is significant and the interaction of moderating variables is also significant, so it can be classified as a quasi moderating variable.

9. Hypothesis testing 9

The magnitude of the interaction effect of government support and *financial assets* on household food security is 0.746 with a *P-value* <0.05 so it can be concluded that government support moderates the effect of *financial assets* on household food security in West Kotawaringin Regency (H9 accepted). The results of hypothesis testing state that the direct effect of *financial assets* on household food security is significant and the interaction of moderating variables is also significant, so it can be classified as a quasi moderating variable.

10. Hypothesis testing 10

The magnitude of the interaction effect of government support and *social assets* on household food security is 0.816 with a *P-value* <0.05 so it can be concluded that government support moderates the effect of *social assets* on household food security in West Kotawaringin Regency (H10 accepted). The results of hypothesis testing state that the direct effect of *social assets* on household food security is significant and the interaction of moderating variables is also significant, so it can be classified as a quasi moderating variable.

11. Hypothesis testing 11

The magnitude of the interaction effect of government support and *physical assets* on household food security is 0.791 with a *P-value* <0.05 so it can be concluded that government support moderates the effect of *physical assets* on household food security in West Kotawaringin District (H11 accepted). The results of hypothesis testing state that



the direct effect of *physical assets* on household food security is significant and the interaction of moderating variables is also significant, so it can be classified as a quasi moderating variable.

1. Testing the 12th hypothesis

The magnitude of the interaction effect of government support and food distribution on household food security is 0.691 with a *P-value* <0.05 so it can be concluded that government support moderates the effect of food distribution on household food security in West Kotawaringin Regency (H12 accepted). The results of hypothesis testing state that the direct effect of food distribution on household food security is significant and the interaction of moderating variables is also significant, so it can be classified as a quasi moderating variable.

4 CONCLUSION

Based on the quantitative analysis that has been done, it can be concluded that *Human assets, Natural assets, Financial assets, Social assets, Physical assets*, food distribution affect household food security in West Kotawaringin Regency. Government support strengthens household food security in West Kotawaringin Regency.

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