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A Strategic Model To Fulfil The Food Security of Farming Families Who Maintain The Culture of Growing Local Madurese Maize

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ABSTRACT

The purpose of this research is to identify the factors affecting farmers' decisions to continue planting Madura local corn and to determine strategies for ensuring food security for Madura local corn farmers in addressing declining productivity. The research design used is quantitative, as it involves numerical data analyzed through descriptive statistical methods. The population of this study is local corn farmers in Madura, with a sample size of 192 respondents. The quantitative method employs testing using SmartPLS 4.0. The results indicate that farmers' decisions to plant Madura local corn significantly impact their coping mechanisms. The choice to plant local corn also has a significant impact on their social capital. Coping mechanisms significantly influence family food security. Social capital also has a significant effect on family food security. The decision to plant Madura local corn indirectly affects family food security through coping mechanisms. Farmers' decisions also impact family food security through social capital. Strong social networks and community support help enhance food security by providing necessary resources and assistance.

Keywords: Coping Mechanisms, Social Capital, Farmers' Decisions, Food Security

1. PENDAHULUAN

Maize is one of the local agricultural commodities that is the main target for achieving food self-sufficiency.(1) According to the Ministry of Agriculture (2020), maize has a multipurpose function (4F), namely for food, feed, fuel, and industrial raw materials (fibre)(2). Maize is currently a strategic national commodity. Based on a report from the Ministry of Agriculture (MOA), the largest maize producing province in 2023 is East Java, which produces 5.73 tonnes of maize or about 21.5% of the total national maize production (3). The maize harvest area in East Java was recorded at 1.19 million ha. Production in 2023 has increased from 2019 which was only 6.34 million tonnes with a harvest area of 1.25 million ha(4).

In 2023, the top maize producing provinces nationwide include, first, East Java Province with a harvested area of 1.19 million ha producing 5.37 million tonnes of maize. (5)East Java is the largest maize producing province in Indonesia because it has a maize planting area of 1,215,354 hectares out of the total maize planting area in Indonesia of 3,859,630 hectares (6). Of East Java's maize planting area, around 360,000 hectares are planted on the island of Madura. However, the problem is that the productivity of Madura maize farmers at this level is still low with an average

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of 2.2 tonnes per hectare. Actually, Madura has great potential for maize cultivation because it has land suitability based on agroecosystem potential(7). However, based on the table above, the trend of maize production in Madura in the last five years has fluctuated and tended to decrease (8).

Based on information from the Agricultural Extension Centre, the problem in maize farming in Madura is the selection of local varieties. Until now, most farmers have been reluctant to change their local maize variety to a superior variety, such as hybrid maize(9). The Agricultural Extension Office has done many things to help farmers with seed and fertiliser assistance. Many farmers who cultivate local Madurese maize do not achieve maximum productivity(11). Low productivity is due to suboptimal use of production inputs. When compared to the production of hybrid maize, the difference in production and productivity of the local variety is very far:

Tabel 1. Calculation of Hybrid and Local Maize Yields in 2023

			Input		**Output**		
No	Types	Area (Ha)	Cost per Ha (Rp)	Total Production **(kg)**	Price Unit (Rp)	Total production value	Benefits of farming / business tani(Rp)
1	Local corn	1	6.930.000	2.200	3.500	7.700.000	770.000
2	Corn hybrid	1	8.700.000	6.800	3.300	22.110.000	13.410.000

Source: Department Of Agriculture, Food Crops, Horticulture, Plantation 2024

The data shows that farmers benefit more from planting hybrid maize than local maize. Although local maize also has several advantages, such as a relatively long shelf life, better pest resistance, and a better flavour compared to hybrid maize, farmers in Madura prefer to plant local maize (12). The farmers' decision aims to fulfil their family's food security. The food security of farming families is characterised by the availability of sufficient and equitable food throughout the region and the ability of each household to consume sufficient, safe, quality, and nutritionally balanced food (13).

The researcher's temporary observation shows that the decision to cultivate Madurese local maize is more due to the farmers' own decision, while cultivating hybrid maize is forced or encouraged by the government. Hybrid maize is planted because the seeds are provided by the government. The choice of local Madurese maize varieties in maize farming is due to a number of reasons related to several aspects including customs and habits, technical and economic aspects. The perception of rejecting hybrid maize in farming and maintaining local varieties is strongly related to the socioeconomic characteristics of Madurese farmers. The reluctance of Madurese farmers to adopt new improved maize varieties is strongly related to the consumption patterns of

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most Madurese people. Although rice is already the staple food consumption pattern of Madurese, maize is still an inseparable part of Madurese life. The results show that the agricultural products they obtain are generally not for sale, but for their own consumption, either as staple food or used as a mixture with rice.

The decision of farmers in choosing to plant local juniper will have an impact in the future for themselves, their families and their environment. In the decision-making process, farmers are influenced by internal and external factors that surround them. The factors of Socioeconomic Status of Farmers, Added Value of Cultivation, Economic Environment, Motivation and Social Environment of Farmers are the focus of this research in influencing the decision of farmers to choose local corn. Risk is a significant problem in local maize farming on Madura Island. Many farmers are unable to achieve their maximum production potential (low farm productivity) due to their decision to plant local maize whose yield productivity is not higher than hybrid maize. The risks faced by farmers can be overcome by utilising coping mechanisms and social capital. These risks are addressed by farmers from different perspectives. These perspectives make farmers have risks in every decision they make.

Food security in some studies can be done through strengthening social capital, which is in the form of self-employment and collective solidarity in facing the problems of poverty and weak food security faced by the community. In fact, (14) states that social capital that emphasises networks that are bound by mutual understanding, cooperation, trust, and mutual support can encourage increased food security. Research (15) found a link between social capital, which is based on trust, norms and networks, and the reduction of poverty caused by farmers who fail to harvest..

Problem-solving in this study, by conducting a strategy in the fulfilment of food security. The decision of farmers to continue planting Madura Local Maize carries its own risks. In the face of risk, two strategies are combined to fulfil the food needs of the family, namely from individual farmers through coping mechanisms and from the social environment of farmers through social capital strategies. Low productivity is very unprofitable for farmers because it causes uncertainty about the acceptance of their business activities. This makes local corn farming, a fairly risky business to do from the market aspect (Rahmawat and Fariyanti, 2018). The high level of risk in localised maize farming is very risky if the commodity is not managed well. The risks of local maize farming consist of production risks and marketing risks. Risk coping strategies deal with the consequences of risk. Risk coping strategies include self-insurance (through savings) - informal group-based. Households can modify food consumption by reducing or modifying food.

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The novelty of this research is that the decision of farmers to continue planting Madurese Local Maize carries its own risks. in dealing with risks combines two strategies in fulfilling family food needs, namely from individual farmers through coping mechanisms and from the farmer's social environment through social capital strategies. Many farmers are not able to produce the maximum production potential (low farm productivity) because of their decision to plant Madura Local Maize where productivity has decreased. The risks faced by farmers will be overcome by the utilisation of coping mechanisms and social capital. The risks are addressed by farmers from a variety of different perspectives. These perspectives make farmers have risks in every decision making. This is what has never been discussed in other studies, namely the utilisation of coping mechanisms and the utilisation of social capital.

2. RESEARCH METHOD

The method used in this research is mixed methods. This research is a research step by combining two forms of research, namely quantitative and qualitative methods. Qualitative method with description to answer the hypothesis about the strategy in fulfilling the food security of Madura Local Corn farmers in the dimension of decreasing productivity, while quantitative with SmartPLS 4.0. The quantitative analysis approach consists of formulating the problem, developing a model, obtaining data, finding a solution, testing the solution, analysing the results, and interpreting the results, then the design of the research model to improve the food security of the Madurese local corn farming family which has started to deteriorate can be described in the figure below.

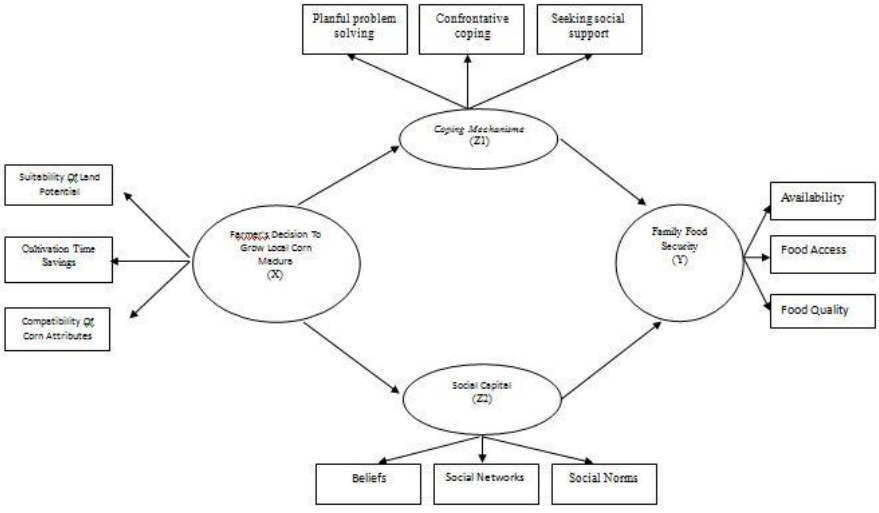

Figure 1.Conceptual Framework of Research

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Samples are part of the population, which has the same characteristics and characteristics as the population, because a sample must be representative of a population, (Sugiyono, 2008: 118). The research sample must be able to represent the state of the population, which means that the data obtained is sample data. The method used for sample determination is to determine the research sample purposively in each village based on the amount of corn productivity in each district in Madura, with the following calculation.

$$n = \frac{N}{1+ne^2}$$

Based on the explanation above, then by using the formula of Slovin, the sample size can be calculated as follows:

$$n = \frac{18.496}{(18.496)(0,1)^2 + 1}$$

$$n = \frac{18.496}{184.96 + 1} = 192$$

The sample in this study was 192 respondents. The Partial Least Square (PLS) technique was chosen because this tool is widely used for complex causal - predictive analyses and is a suitable technique to be used in predictive applications and theoretical developments such as in this study. In PLS, latent variables can be the result of reflecting their indicators, termed reflective indicators. In addition, it can also be constructed (formative) by its indicators, termed formative indicators

The data collection technique that will be used in this research is using a questionnaire. This method gives respondents the responsibility to read and respond to statements from the questionnaire that can provide explanations regarding the purpose of the survey and statements that are not understood by respondents. The questionnaires were collected immediately after they were completed by the respondents. The results of the questionnaire were used to obtain data on the dimensions of the constructs being developed in this research.

This research was conducted in the Madura Regency by taking four districts, namely Bangkalan, Sampang, Pamekasan and Sumenep. The location was chosen purposively because the island of Madura is a region that has 30% of the local maize production potential for East Java and the selected sub-districts are the main producers of local maize in each district. The respondents in this study are local maize farmers in four districts, namely Bangkalan, Sampang, Pamekasan and Sumenep with a total of 18,496 people.

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3. RESULTS AND DISCUSSION

Outer Model (Measurement Model and Indicator Validity)

The relationship model between variables and indicators in the measurement model for reflective variables, namely the variables of Farmer Decisions to Plant Madura Local Corn, Coping Mechanisms, Social Capital, Family Food Security are based on the outer Loading table..

Tabel 2.Convergent Validity

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
X1.1 <- X1	0,793	0,794	0,033	23,792	0,000
X1.2 <- X1	0,838	0,836	0,031	27,141	0,000
X1.3 <- X1	0,818	0,815	0,036	22,441	0,000
Y1.1 <- Y1	0,840	0,814	0,115	7,290	0,000
Y1.2 <- Y1	0,887	0,866	0,102	8,696	0,000
Y1.3 <- Y1	0,849	0,845	0,103	8,252	0,000
Z1.1 <- Z1	0,847	0,845	0,028	29,825	0,000
Z1.2 <- Z1	0,882	0,881	0,021	42,090	0,000
Z1.3 <- Z1	0,842	0,841	0,030	27,795	0,000
Z2.1 <- Z2	0,894	0,850	0,175	5,109	0,000
Z2.2 <- Z2	0,874	0,826	0,157	5,570	0,000
Z2.3 <- Z2	0,724	0,678	0,242	5,988	0,003

Source: Data analysis, 2024

Factor Loading is the correlation between indicators and variables, if it is greater than 0.5 and or p-values = significant, then the indicator is valid and is an indicator / measure of the variable Based on the outer loading table above, the Loading Factor (factor loading) seen in the original sample number> 0.5 then meets convergent validity. The results of the analysis in the table above show that all indicators on the research variables, namely the Madura Local Corn Planting Farmer Decision Variable, Coping Mechanism, Social Capital, Family Food Security, have a loading factor> 0.5, so the indicator meets convergent validity.

The results of the analysis show that all indicators on the research variables, namely the variables of Farmers' Decision to Plant Madura Local Corn, Coping Mechanism, Social Capital, Family Food Security are significant, because the p-value <0.05, then the indicator meets convergent validit

Discriminant Validity

Overall, it shows that all research variables, namely the Decision of Farmers to Plant Madura Local Corn, Coping Mechanism, Social Capital, Family Food Security, have an AVE square value greater than the value of their correlation with other variables, thus fulfilling discriminant validity.

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Tabel 3. Construct Validity / Variable (Contruct Validity)

	AVERAGE VARIANCE EXTRACTED (AVE)
X1	0,667
Y1	0,738
Z1	0,735
Z2	0,696

Source: Data analysis, 2024

The next measurement model is the Avarage Variance Extracted (AVE) value, which is a value that shows the amount of indicator variance contained by the latent variable. Convergent AVE values greater than 0.5 also indicate good validity adequacy for latent variables. In reflective indicator variables, it can be seen from the Avarage variance extracted (AVE) value for each construct (variable). A good model is required if the AVE value of each construct is greater than 0.5. The test results show that the AVE value for the Madura Local Corn Farmer Decision construct (variable), Coping Mechanism, Social Capital, Family Food Security has a value greater than 0.5, so it is valid.

Tabel 4. ReliabilitasKonstruk

	Cronbach's Alpha	Composite Reliability
X1	0,751	0,857
Y1	0,823	0,894
Z1	0,819	0,892
Z2	0,790	0,872

Source: Data analysis, 2024

Construct reliability is measured by the composite reliability value, the construct is reliable if the composite reliability value is above 0.70, so the indicator is called consistent in measuring the latent variable. The test results show that the constructs (variables) Farmers' Decision to Plant Madura Local Corn, Coping Mechanism, Social Capital, Family Food Security have a composite reliability value greater than 0.7. So it is reliable.

Inner Model (Structural Model Testing)

Testing of the structural model is done by looking at the R-Square value which is a goodness-fit model test. Inner model testing can be seen from the R-square value in the equation between latent variables. The R2 value (Coefficient of Determination) explains how much the exogenous variables (independent / free) in the model are able to explain the endogenous variables (dependent / dependent)

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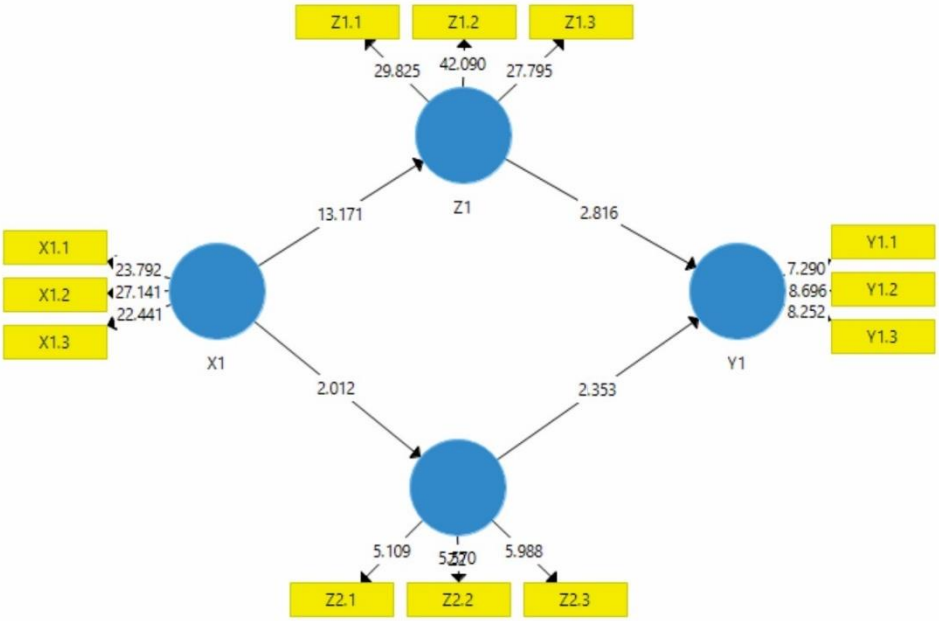
Tabel 5. R Square

	R Square	R Square Adjusted
Y1	0,073	0,063
Z1	0,336	0,333
Z2	0,027	0,021

Source: Data analysis, 2024

The value of R^2 (On Family Food Security) = 0.573 It can be interpreted that the model is able to explain the phenomenon/problem of Family Food Security by 57.3%. While the rest (43.7%) is explained by other variables (other than Farmers' Decision to Plant Madura Local Corn, Coping Mechanism, Social Capital,) that have not been included in the model and error. This means that the performance of employees is influenced by the decision of farmers to plant Madura local corn, coping mechanisms, social capital, by 57.3% while 43.7% is influenced by variables other than the decision of farmers to plant Madura local corn, coping mechanisms, social capital, Furthermore, we can see the path coefficient on the inner model.



Gambar 2. Path Coefficients (Mean, STDEV, T-Values)

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Direct Effect

Tabel 6. Path Coefficients (Mean, STDEV, T-Values)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
X1 -> Z1	0,580	0,584	0,044	13,171	0,000
X1 -> Z2	0,163	0,165	0,081	2,012	0,045
Z1 -> Y1	0,260	0,260	0,092	2,816	0,005
Z2 -> Y1	0,235	0,249	0,098	2,353	0,004

1. Farmers' decision to choose Madura local maize affects coping mechanisms, with p-values = 0.000 less than α = 0.05 (5%).
2. The decision of farmers to choose Madura local corn has an effect on Social Capital, with p-values = 0.045 smaller than α = 0.05 (5%).
3. Coping mechanisms have an effect on the fulfilment of family food security, with p-values = 0.005 smaller than α = 0.05 (5%).
4. Social capital has an influence on the fulfilment of family food security, with p-values = 0.004 smaller than the value of α = 0.05 (5%)

Indirect Effect

Tabel 7. Path Coefficients (Mean, STDEV, T-Values)

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
X1 -> Z1 -> Y1	0,151	0,153	0,057	2,628	0,009
X1 -> Z2 -> Y1	0,106	0,109	0,016	2,360	0,019

1. The decision of farmers to choose Madura local corn has an effect on the fulfilment of family food security through coping mechanisms, with p-values = 0.009 smaller than the value of α = 0.05 (5%).
2. The decision of farmers to choose Madura local corn has an effect on the fulfilment of family food security through Social Capital, with p-values = 0.019 smaller than the value of α = 0.05 (5%).

Thus, social capital acts as a mediating variable (because it is able to mediate) on the effect of farmers' decision to choose Madura local corn on family food security. And Coping Mechanism acts as a mediating variable (because it is able to mediate) on the effect of farmers' decision to choose local Madurese corn on family food security.

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Influence of the decision to choose Madura local corn on coping mechanism

Based on the results of the research, it shows that the decision of farmers to choose Madura local corn has an effect on coping mechanisms. The decision of Madurese maize farmers to keep planting local maize involves various risks, especially related to production and market aspects. These risks include various factors such as natural conditions, the availability of agricultural inputs (such as fertilisers and seeds), climate change, market price fluctuations, and the uncertainty of yields. In agricultural production theory, Just and Pope (1979) emphasise that inheritance in input use decisions plays an important role in the production process. This is relevant in the context of agriculture in Madura, where the decision to use inputs such as local maize seed presents its own challenges.

Based on the results of the research, it shows that the decision of farmers to choose Madura local corn has an effect on coping mechanisms. The decision of Madurese maize farmers to keep planting local maize involves various risks, especially related to production and market aspects. These risks include various factors such as natural conditions, the availability of agricultural inputs (such as fertilisers and seeds), climate change, market price fluctuations, and the uncertainty of yields. In agricultural production theory, Just and Pope (1979) emphasise that inheritance in input use decisions plays an important role in the production process. This is relevant in the context of agriculture in Madura, where the decision to use inputs such as local maize seed presents its own challenges.

In this study, the risks Madurese farmers face in growing local maize do not only come from environmental and production conditions, but also from socio-economic and technological factors. The push factors, such as limited access to modern farming technology or minimal government support, become the standard risks that farmers have to manage. On the other hand, constraining factors, such as high input prices, changes in agricultural policy, or the lack of markets for local maize products, also play a role in adding to the complexity of the risks faced. Every decision made by farmers, whether in increasing or decreasing the use of inputs, will affect their production efficiency.

To deal with these risks, smallholder farmers use various strategies known as coping mechanisms or risk management mechanisms. Coping mechanisms refer to a series of actions or strategies that farmers take to overcome the pressures or challenges they face in managing their production. In this context, Madurese maize farmers can use several approaches to balance the risks. Examples of coping mechanisms that are often used include crop diversification (planting more than one crop besides maize to reduce dependence on a single commodity), the use of proven

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traditional farming techniques, or even adopting more modern farming technologies if possible. In addition, farmers can also reduce risks by improving their resource management, such as more efficient use of irrigation water, selection of maize varieties that are resistant to local conditions, and improved skills in production management and marketing. Social factors also play an important role, such as involvement in farmer groups, which allows farmers to share information and experience in managing their farms and gain better access to farming resources.

Through these coping mechanisms, farmers attempt to balance the risks they face with optimal production efficiency. The decision to keep growing local maize not only demonstrates farmers' commitment to their traditional commodities, but also their ability to adapt to environmental and economic changes. Coping mechanisms are one of the key elements in risk management strategies, which enable farmers to survive in conditions of uncertainty. Overall, this study highlights that the decision of Madurese maize farmers to keep planting local maize is not a decision taken without consideration of risk. On the contrary, these risks are faced with careful strategies through various risk management mechanisms, which in turn can affect the efficiency and sustainability of agricultural production. Farmers need to carefully balance between risks and risk mitigation efforts through coping mechanisms to ensure that their decisions produce profitable results in the long run.

The influence of the decision to choose Madura local corn on Social Capital

Based on research results, it shows that farmers' decisions to choose local Madurese corn have an influence on social capital. The decision of farmers in Madura to choose to plant local corn does not only have an impact on production aspects, but also has a significant impact on social capital in their communities. Social capital refers to social networks formed between individuals or groups in their relationships with other parties. In the Madurese local corn farmer context, social capital plays an important role in improving welfare, supporting food security, and strengthening community cooperation.

According to Pierre Bourdieu's theory, social capital is formed from social networks that can, in certain conditions, be converted into economic capital. This network usually looks at institutions in communities that have important social positions in society. In the local corn farming community in Madura, social capital develops through relationships between individuals who support each other, trust together, social norms, and active participation in community networks. This social capital facilitates various forms of cooperation and solidarity that are beneficial for the lives of society as a whole, especially in overcoming the challenges faced in the agricultural sector.

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Farmers' decision to plant local corn directly influences the strengthening of social capital among farmers and their communities. Farmers who choose local corn are usually involved in close social networks, where social beliefs and norms play an important role in building cooperation between them. For example, farmers often exchange information about farming techniques, share day sources such as seeds or agricultural tools, and help each other during the harvest period. These relationships create a strong sense of interdependence, which becomes an integral part of their social capital.

Apart from that, social capital networks often involve community leaders or figures who have important positions in the village. They play a role in connecting farmers and outside parties, such as regional governments or agricultural institutions, which can provide assistance or support in the form of agricultural programs, training, or access to markets. The presence of these community figures in social networks helps strengthen social capital, because they have the ability to direct important resources and information to farmers' success.

he social capital formed from these social relationships can also increase the resilience of farmers' families. Social support from the surrounding environment, both in the form of assistance received and morals, helps farmers face various challenges, such as bad weather, price fluctuations, or financial difficulties. With a strong social network, farmers can more easily overcome the risks they face, both through helping each other between their farmers and supporting the surrounding community.

The social capital that develops among local corn farmers in Madura is generally dominated by three main components: trust, normasocial, and participation in social networks. Trust is a fundamental element in social capital, because farmers must have the belief that they can rely on others in their communities. Social norms, on the other hand, regulate the behavior and interactions between farmers, ensuring that they respect each other and promote mutual interests. Partisipasidalamjaringansosialmemungkinkanpetaniuntukterhubungdenganberbagaipihak, both as good as your pet and external parties, who can provide the help or information needed.

In the research respondent environment, social capital can be seen from the close relationships between neighbors and relatives, where their homes are close together and they know each other. These relationships form a close social network, supported by the presence of community figures who play an important role in supporting the lives of farmers. With this network, farmers can utilize their social capital for various productive activities that involve cooperation and collaboration with other parties, both inside and outside the community.

Overall, Madurese farmers' decision to plant local corns has a positive impact on the

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development of social capital in their communities. The social capital formed through a network of beliefs, social norms and active participation not only helps farmers in carrying out their agricultural activities, but also strengthens the social and economic resilience of society as a whole. Social capital is an important asset that allows farmers to overcome challenges, increase production efficiency, and promote their welfare amidst the various changes and uncertainties faced in the agricultural sector.

Influence of Coping mechanisms on family food resilience

Based on research results, the coping mechanism or handling mechanism has been proven to have a significant effect on the food security of local corn farming families in Madura. Coping mechanisms refer to the various strategies used by individuals or groups to overcome challenges or pressure in everyday life, including in this case, the challenges faced in maintaining food security. Family food resilience involves the availability, accessibility, and stability of food, which is greatly influenced by the family's ability to manage resources and address risks. In the context of local Madurese corn farmers, coping mechanisms play an important role in maintaining adequate and sustainable food conditions for families.

One form of coping mechanism carried out by farmers is through diversification of food sources and income. Farmers do not rely solely on local maize as the sole source of food, but also grow other crops or raise livestock as an additional source of income. These diversifications help farming families face the risk of crop failure or price fluctuations in the market. Thus, even though corn production is reduced, family food availability is maintained because they have reserves from other sources.

Apart from that, the use of social networks or social capital is also an important part of coping mechanisms. Social capital, such as relationships with neighbors, relatives, and communities, provides material and non-material support when farmers experience difficulties. Help from these social networks can be in the form of food loans, employment assistance, or moral support, all of which contribute to increasing food security. The presence of a strong community and mutual trust between farmers helps them overcome shared challenges and ensure family food needs remain met.

Coping mechanisms also include adaptation in agricultural engineering. Local Madurese corn farmers often use agricultural practices that suit their environmental conditions, such as choosing corn varieties that are resistant to weather changes or applying simple irrigation techniques to overcome drought. This adaptation ensures that food production remains stable even when faced with uncertain natural conditions. Efficient resource management is also part of a

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coping mechanism that allows farmers to maintain optimal crop yields and maintain food availability for their families.

With an effective coping mechanism, farmers can overcome the various risks faced in agricultural activities and protect their family's food. Success in managing risks, both from production, economic and social aspects, really depends on the farmer's ability to adapt and utilize existing resources. This shows that the coping mechanism is a key factor in ensuring food stability and the welfare of farming families in Madura.

The Influence of Social Capital on Family Food Resilience

Based on the results of the study, social capital proved to have a significant effect on the food security of local corn farming families in Madura. Social capital refers to the network of relationships, norms, and beliefs formed within a community that allow members to work together to achieve a common goal. In the context of local maize farmers, social capital plays an important role in supporting food security, as strong social networks enable farmers to help each other face challenges that affect food availability and access.

Social capital includes three main components: trust, social norms, and participation in community networks. Trust between farmers enables effective cooperation, for example in sharing information about agricultural techniques or in managing resources together. Social norms prevailing in the community also help to ensure that community members adhere to the rules and support each other, especially in conditions of crisis or food shortages. Meanwhile, active participation in social networks expands farmers ' access to assistance, both from sesame farmers and from outside parties such as the government or agricultural institutions.

With strong social capital, farmers can overcome various challenges that can affect food security, such as crop failures or price fluctuations in the market. Social support from the community, either in the form of direct assistance such as food or labor assistance, as well as moral support, is very important to maintain family food stability. Social networks also facilitate farmers ' access to government programs or external assistance aimed at increasing production and strengthening food security.

Therefore, social capital acts as a valuable resource for farmers in managing risks and ensuringfamily food security. Close social relationships, built trust, and solid cooperation among community members are important factors in dealing with various pressures that can threaten food availability. In the long run, strong social capital not only improves the well-being of individuals, but also strengthens the resilience of communities as a whole to food and economic challenges.

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family food resilience through coping mechanisms

Based on the results showed that the decision of farmers to choose local corn Madura affect the fulfillment of family food security through the Coping mechanism, with the value of p-values= 0.000 is smaller than the value of ③ = 0.05(5%) the decision of madura corn farmers who continue to plant local corn contains its own risks. Coping mechanism strategy for local corn farmers, is done by reacting by seeking support from outside parties, in the form of information, real help, and emotional support. In this study, petanij agung local will always try to solve the problem by seeking help from others outside the family such as friends and neighbors, the help can be physical and non-physical

The theory of Just and Pope (1979) states that the risk in the decision of the use of inputs plays an important role in the production process, especially agricultural production. This is what then appears influential risk analysis in production risk management, in the form of decisions on the use of certain inputs (addition or reduction of inputs), all of which will also affect the level of production efficiency of farmers. In addition to risk analysis, it is also necessary to analyze the behavior of farmers in facing irisiko, therefore it can provide an understanding of corn farming productivity problems. This is also stated by Khumbakar (2002) about the existence of risks and risk behaviors that will cause bias towards the estimation of production parameters, and technical efficiency, causing misinterpretation of the phenomenon of decreased productivity.

Lewin's theory (1951) formulated a model of behavioral relations which says that behavior is a function of personal/individual characteristics and the environment. The characteristics of individuals in this study are indicated by variables of socioeconomic status, added value, personality traits and attitudes that interact with environmental factors in determining behavior in this case the decision of selection of local corn cultivation. Field strength analysis is a technique developed by Kurt Lewin to diagnose situations, can be used to examine the variables involved in determining effectiveness. Technical diagnosis is also useful for analyzing the various change strategies that can be used in a given situation. If there is a gap between the actual things with the things that are desired to happen in a situation, and have done an analysis of the cause of the gap, then the analysis of field strength becomes a useful tool. Before implementing a change strategy, it is necessary to determine the things that are owned to make these change efforts. and the things that drive it.Lewin assumed that in every situation there are driving and inhibiting factors that influence every possible change. Driving force factors are factors that influence a situation to push in a certain direction; these factors tend to drive change and keep it going. Restraining factors are actors who act to curb or minimize the driving factor. Equilibrium is achieved when the number of

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driving factors equals the number of inhibiting factors. The balance can be raised and lowered by changing the relationship between driving and inhibiting factors.

In this research, the driving and inhibiting factors that become the prescription in every action, show the risks faced by farmers in deciding to plant local corn, the risks faced can be balanced in various ways, one of which is the coping mechanism and social capital. With the taping mechanism, farmers can meet their goals, namely to meet the needs of the family.

The farmer's decision to plant the corn locally, is very much in the family's favor. This is due to an increase in local corn productivity that is actually still inferior to hybrid corn. Family farming is more of a coping mechanism of reducing production than increasing income, so that farmers experience economic pressure, a strategy carried out on farmers that adds income, reduces production, and an economic strategy of debt, selling goods, taking the savings they have.

The influence of farmers' decisions to choose local Madurese corn on fulfilling family food security through social capital

Based on the results of the study showed that the decision of farmers to choose local corn affected the resilience of families through social capital, with the value of p-values= 0.006 smaller than the value of it = 0.05 (5%). This proves that social capital that develops in response environments is participatory in a network. Utilization of social capital can be seen from the existence of a relationship in the neighborhood and relatives who are close to each other. Social Capital Network in local farmers in Madura is dominated by social components that have important activities in the village. This is to describe a large community of social components that exist around it.

The belief that there is a local corn farmer in Madura among the community is very strong, because when experiencing difficulties they come to help each other besides that, the belief is also dominated by the social component that has an important problem in the village. This is in contrast to the district apparatus that lack of trust from the community. The same is the case with the research of Rudianto et al. (2019) which states the majority of farmers have the highest surcharges in terms of confidence. The formation of a social network and trust local corn plan is also supported by the organization that is followed. Local corn farmers, the majority follow a religious group whose language is called Madura with a compound for men and Muslims for women. In addition to religious organizations, they also follow groups of farmers. The organization that followed also became a place of social interaction and also had an impact on their daily lives. This is because when local corn farmers experience financial risks, then they will borrow money or find a solution together in the organization. This is in contrast to the research of Italy (2015) that the

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increase in low social capital control caused by the busyness of farmers ' homes. Social norms that exist local corn farmers in Madura are norms that are not written where there are not many responses stating that there are rules that are used and there are rules that are agreed upon.

The Habitus theory, introduced by French sociologist Pierre Bourdieu, defines social capital as a collection of a sum of resources, either actual or potentially connected by networks or correlations, that have little institutional understanding and recognition. Social capital refers to the social network that an individual (or group) has in relation to others. Social capital is always important for Human Capital Development. Social capital is supposed to improve individual well-being. Bourdieu who mentioned that social capital is formed by the existence of social networks, in certain conditions can be transformed into economic capital and usually the way institutions look at community groups that have a high social position in a society.

Social capital is known as a social resource that is formed from society and used together to help people's lives. Social capital can be a sense of trust, norms and social networks. The existence of social capital can increase adaptive cooperation and the functioning of society through the implementation of various activities that are productive and involve cooperation with related groups and parties. Social support from the environment and the surrounding community can increase the resilience of family farmers

4. CONCLUSIONS

Based on the results of previous analysis and discussion, the results of this research can be concluded as follows:

1. The Influence of Farmers' Decisions on Coping Mechanism: Farmers' decisions to plant local Madurese corn significantly influence their coping mechanism. This choice plays a role in how farmers deal with agricultural risks and challenges, helping them to manage emerging problems more effectively.
2. Influence of Farmers' Decisions on Social Capital: Farmers' choice to grow local corn also has a significant impact on the social capital they have. Social capital, social institutions, beliefs and norms, play an important role in supporting agricultural activities and farmers' daily lives.
3. Coping mechanisms and Food Security: Coping mechanisms have a significant effect on fulfilling family food security. The strategies implemented to deal with agricultural risks and challenges contribute to maintaining food availability and access for farm families.
4. Social Capital and Food Security: Social capital also has a significant influence on

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fulfilling family food. Social support and cooperation within the community help farmers manage risks and ensure food stability for their families.

5. Farmers' Decisions on Food Security Through Coping mechanisms: The decision to plant local Madurese corn has an indirect impact on family food security through coping mechanisms. The risk management strategy implemented by petanib contributes to meeting family food needs.
6 .Farmers' Decisions on Food Security Through Social Capital: Apart from that, farmers' decisions also influence family food security through social capital. Strong social networks and community support help improve food security by providing the resources and assistance needed to face challenges.

Suggestions

Based on the results of this research, there are several considerations that can be conveyed through suggestions from researchers, namely:

1. Optimization of Coping mechanism Strategies: Farmers are advised to deepen their knowledge and skills in implementing effective coping mechanisms, such as diversification of agricultural products and risk management techniques. Training and guidance programmes that focus on managing risks and adapting to changing agricultural conditions will help farmers better meet challenges.
2. Strengthening Social Networks and Community Support: Developing and strengthening social capital through the formation of farmer groups or agricultural communities can increase solidarity and cooperation among farmers. Programs that facilitate interaction and exchange of information between farmers can help in sharing resources, knowledge and support in crisis situations
3. Implementation of Social and Economic Assistance Programmes: Governments and relevant institutions should consider providing additional support through social and economic assistance programmes that address the special needs of local corn farmers. This could include subsidies, technology assistance, or access to better markets

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