The Causality Model of Maize Farmers' Income: Integrating Social Capital, Supply Chain, and Competitive Advantage

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Abstract— **Social capital structure, effective supply chain, and competitive advantage have been expected to increase maize farmers' income. Maize, as a main income, has not been able to prosper farmers yet. Structural Equation Modelling was applied to analyze the effectiveness of social capital, supply chain, and competitive advantage on the maize farmers' income. This study was conducted with 120 maize farmers as samples in one of Indonesia's maize production centers. Three indicators measure each variable. Social capital indicators are trust, social network, and norm; supply chain is the flow of goods, flow of information, and flow of capital; the competitive advantage is cost leadership, product differentiation, and focus. Furthermore, the indicators of farmers' income are land area, production, and labor. The study revealed that social capital did not directly impact maize farmers' income by the test variables of social capital, supply chain, and competitive advantage. In this case, in increasing maize farmers' income, social capital needs to be supported by supply chain and competitive advantage as intervening variables. The study further revealed that social capital significantly affected the supply chain and competitive advantage, in which these two variables significantly influenced maize farmers' income. Moreover, supply chain and competitive advantage have reinforced social capital to increase maize farmers' income. From the intervening variables, competitive advantage was more vital to reinforce social capital than supply chain in increasing maize farmers' income**.

Keywords— **Social capital; supply chain; competitive advantage; farmers' income.**

I. INTRODUCTION

South Sulawesi is one of the national maize production centers ranked fourth after East Java, Central Java, and Lampung in Indonesia [1]. The total production of maize in South Sulawesi reached 1,515,329 tons. This condition places South Sulawesi as the second-largest producer outside Java after Lampung as the first. Maize production in South Sulawesi was spread throughout all-region with production centers in Jeneponto, Bone, Gowa, Bantaeng and Bulukumba Regencies. The highest maize production is in Jeneponto which reached a harvest area of 47,663 hectares and production of 201,446 tons. The South Sulawesi Agricultural Census results showed that most of the population in Jeneponto Regency became farmers (76.27%) out of 59,247 head of population [2].

Sulawesi has the potential to be the biggest contributor to maize production outside Java by paying attention to the potential of land that can still be developed for maize cultivation, but it has not happened. Ironically, the import of maize reached a high number. Indonesia's Ministry of Agriculture released that estimated maize need in Indonesia reached 7,468,885 tons, whereas the maize stock only about 470,422 tons from May to September 2020. This condition showed that most of the maize needs should be imported from other countries. Thus, good social capital and supply chains are vital in handling maize agribusiness in South Sulawesi and the increasing competitive advantage of maize production.

Social capital is an investment to get new resources in society. Weak social capital will dim the spirit of cooperation, exacerbate poverty, increase unemployment, crime, and hinder efforts to improve the population's welfare. Communities that can utilize the potential of social capital have been able to contribute to improving rural communities' welfare.

Jeneponto Regency, as a center of maize production in South Sulawesi had adequate social capital. The social capital

of the Jeneponto community related to food security was the existence of mutual assistance in the form of giving and lending food and exchanging food among neighbors and relatives. The social capital was also identified by the existence of a relatively high level of trust between community members and the government, especially agricultural extension agents, village heads, and community leaders [3].

In current conditions, Jeneponto Regency was categorized as a lagging category in Indonesia. In Presidential Regulation Number 131 of 2015 concerning the Determination of Disadvantaged Regions in Indonesia in 2015-2019, which was set on November 4, 2015, out of 122 regencies, Jeneponto became the only underdeveloped regency in South Sulawesi. The underdeveloped area is defined as a district or regency with less developed regions and communities than other regions on a national scale. An area was designated as a disadvantaged region based on criteria: the community's economy, human resources, facilities and infrastructure, financial capacity, accessibility, and regional characteristics.

II. MATERIAL AND METHOD

A. Research Approach

This research was explanatory research that aims to analyze the relationship of one variable to other variables or how one variable affects other variables. This research is explanatory research that uses quantitative data. Explanatory research depends on dependent variables in which the highest accuracy method possibility can be used to set the predictors [4].

B. Place and Time

The study was conducted from March to September 2018 in Jeneponto Regency. Jeneponto Regency was selected to be the study area considering that this area is one of the largest maize production centers in South Sulawesi, Indonesia.

C. Population and Samples

This research population was maize farmers in Jeneponto Regency, South Sulawesi, as one of Indonesia's main maize production centers. The samples were performed using probability proportional to size sampling method. Then, samples were selected by random sampling proportionally in every village. Structural Equation Model (SEM) through the hypothesis tests is used to generalize structural component analysis using random survey [5]. The number of samples was 120 maize farmers. For the SEM model, the corresponding samples are between 100 and 200. If the sample size is too large, e.g., 400, the method would become "very sensitive," thus having difficulty in reaching the goodness of fit sizes. The sample size depends on the number of indicators multiplied by 5 to 10. The total of indicators in this study were 16 indicators [6].

D. Test of Validity and Reliability Instrument

Testing the instrument's validity calculates the correlation coefficient between the item score and total score in the level of 95% significance or a = 0.05 [7]. Total correlation is the correlation among item scores [8]. Interpretation by consult critical r-value, if r arithmetic > critical r or r table at degrees free (df) = n - 2; then the instrument is declared valid.

Reliability test aims to determine the measuring tools' reliability or to know the measuring instrument's consistency is used to measure the same object more than once. In other words, this reliability test can be interpreted as the level of confidence in the measurement results. Reliability testing performed on the statement items used in this study is by the Alpha Cronbach method. The cut of point received for the Cronbach Alpha level is 0.60. The instrument is considered to have an acceptable level of reliability if the measured reliability coefficient value is 0.60. Instruments are identified as reliable if they can be used to measure repeated variables that will produce the same data or vary only slightly.

E. Data Analysis

The Structural Equation Model (SEM) procedure steps generally contain a concept-based model and the model's theory and specifications. The specification of the model is divided into three parts, i.e. (1) specification of measurement model, (2) structural model, and (3) path diagram, which is a combination of measurement and structural model.

1) Specification of Measurement Model: The specification of the measurement model is to define the latent variables and observed variables then the relationship between each latent and observed variables. In this study the specification of measurement models includes latent variables (social capital, supply chain, competitive advantage and farmers' income), and observed variables (trust, norm, social network, flow of goods, flow of information, flow of capital, cost leadership, product differentiation, product focus, land area, production, and labor). The relationship between latent variables and observed variables include social capital variables [trust ($Y_{1.1}$), norm ($Y_{1.2}$), social network ($Y_{1.3}$)], supply chain variables [flow of goods ($Y_{2.1}$), flow of information ($Y_{2.2}$), flow of money, ($Y_{2.3}$)], competitive advantage variables [cost leadership ($Y_{3.1}$), product differentiation ($Y_{3.2}$), product focus ($Y_{3.3}$)], and income variables [land area ($X_{1.1}$), production ($X_{1.2}$), labor ($Y_{1.3}$)]. The specifications can be written by the equation below:

$$
\begin{aligned}
X1.1 &= \lambda 1.1\xi 1 + \delta 1 & Y2.1 &= \lambda 21\eta 2 + \varepsilon 4 \\
X1.2 &= \lambda 1.2\xi 1 + \delta 2 & Y2.2 &= \lambda 22\eta 2 + \varepsilon 5 \\
X1.3 &= \lambda 1.3\xi 1 + \delta 3 & Y2.3 &= \lambda 23\eta 2 + \varepsilon 6 \\
Y1.1 &= \lambda 11\eta 1 + \varepsilon 1 & Y3.1 &= \lambda 31\eta 3 + \varepsilon 7 \\
Y1.2 &= \lambda 12\eta 1 + \varepsilon 2 & Y3.2 &= \lambda 32\eta 3 + \varepsilon 8 \\
Y1.3 &= \lambda 13\eta 1 + \varepsilon 3 & Y3.3 &= \lambda 33\eta 3 + \varepsilon 9
\end{aligned}
\quad (1)
$$

where:
λ: relationship between indicators with latent variables
ε: measurement error from indicator of endogen variables
δ: measurement error from indicator of exogenous variables

2) Specification of Structural Model: The structural model specification is defining the causal relationship between the latent variables. In this research the structural model specification is as follows:

$$Y1 = f(X1) \qquad (2)$$
$$Y2 = f(X1) \qquad (3)$$
$$Y3 = f(Y1, Y2, X1) \qquad (4)$$

Equations (2), (3) and (4) can be analyzed and made in a regression equation as follows:

$$y1 = \alpha 0 + \alpha 1 X1 + \mu 1 \qquad (5)$$
$$y2 = \alpha 0 + \alpha 2 X1 + \mu 2 \qquad (6)$$

$$y3 = \beta 0 + \beta 1Y1 + \beta 2Y2 + \beta 3X1 + \mu 3 \qquad (7)$$

Equations (6) and (7) are two simultaneous equations so that the reduced form assumption can be obtained by rewriting equation (4) by substituting equation (5) to equation (7):

$$Y3 = \Omega 0 + \Omega 1Y1 + \Omega 2Y2 + V \qquad (8)$$

where:

Ω_0: $\beta_0 + \beta_0 \alpha_0$ is constant

Ω_1: $\beta_1 \alpha_1 + \beta_2$ is direct effect X_1 to Y_1 (β_2) and undirect effect X_1 to Y_3 through Y_1 ($\beta_1 \alpha_1$)

Ω_2: $\beta_1 \alpha_2 + \beta_2$ is direct effect X_1 to Y_2 (β_2) and undirect effect X_1 to Y_3 through Y_2 ($\beta_1 \alpha_2$)

V: random error μ_1 and μ_2

Equation (8) explains that the exogenous variable is farmers' income (X_1) whether endogenous variables are social capital (Y_1), supply chain (Y_2), and competitive advantage (Y_3).

This research has seven hypotheses:

- Social capital has a significant influence on maize farmers' income.
- Social capital has a significant influence on the supply chain of maize.
- Social capital has a significant influence on the competitive advantage of maize farmers.
- The supply chain has a significant influence on maize farmers' income.
- Competitive advantage has a significant influence on the maize farmers' income.
- Supply chain as an intervening variable is to strengthen the influence of social capital on farmers' income.
- Competitive advantage as an intervening variable is most strengthen the influence of social capital on farmers' income.

III. RESULTS AND DISCUSSION

A. Measurement Model

The construct on Structural Equation Model (SEM) technique is identified as the latent variable (the variable cannot be directly measured), and the indicator is the observed variable as the operationalization of the measurement of the latent variable. Test results with confirmatory analysis of each variable are presented as follows:

1) Social Capital: Social capital is a latent variable measured by three indicators, i.e., trust ($Y_{1.1}$), social network ($Y_{1.2}$), and norm ($Y_{1.3}$). Test results with confirmatory factor analysis are presented in Fig. 1. Confirmatory test results showed that the factor load of the social capital indicators, i.e. trust, social network and norm, was above 0.5 with the highest factor load was the social network (0.619), followed by the trust (0.618) and norm (0.617). Thus, the indicator of trust (Y1.1), social network (Y1.2), and norm (Y1.3) can be used to measure social capital (Y1).
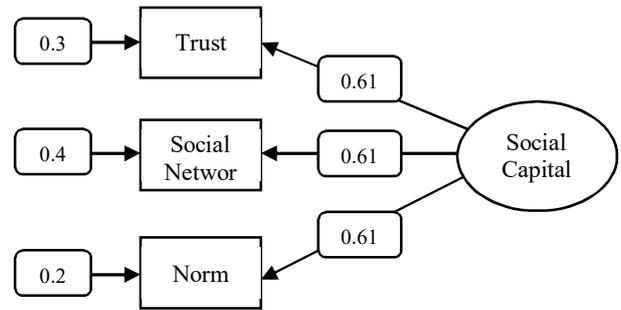

Fig. 1 Cost value of social capital variables

2) Supply Chain: The measured indicators used in the supply chain were the flow of goods ($Y_{2.1}$), the flow of information ($Y_{2.2}$), and the flow of money ($Y_{2.3}$). The test results by confirmatory factor analysis were presented in Fig. 2.
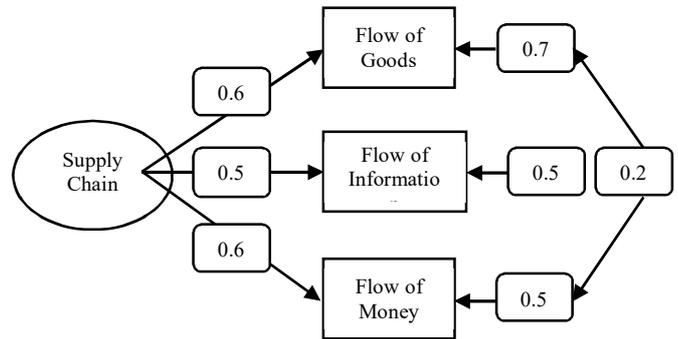

Fig. 2 Load value of supply chain variables

The factor load value on three supply chain indicators was above 0.5 with the description of the flow of goods (0.65), the flow of information (0.52), and the flow of money (0.64). Thus, the indicators flow of goods ($Y_{2.1}$), flow of information ($Y_{2.2}$) and flow of capital ($Y_{2.3}$) can be used to measure supply chain (Y_2). Confirmatory analysis results also showed that there was a positive correlation of 0.23 between the flow of goods and the flow of money.

3) Competitive Advantage: Measurable indicators used in competitive advantage were cost leadership ($Y_{3.1}$), product differentiation ($Y_{3.2}$) and focus ($Y_{3.3}$). Test results with confirmatory factor analysis were presented in Fig. 3.
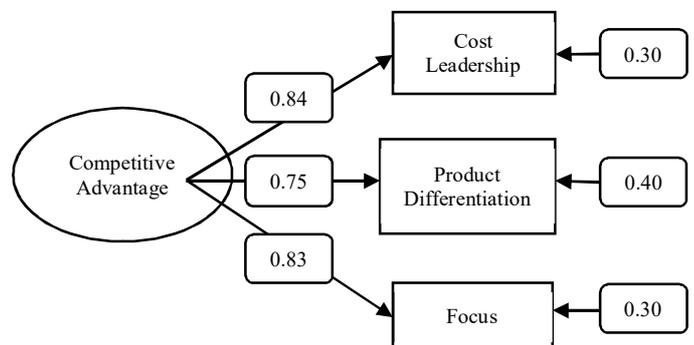

Fig. 3 Load value of competitive advantage variable

The value of factor loads on three indicators was above 0.5 with the order of cost leadership (0.84), focus (0.83) and product differentiation (0.75). Thus, the indicator of cost

leadership ($Y_{3.1}$), product differentiation ($Y_{3.2}$) and focus ($Y_{3.3}$) can be used to measure competitive advantage (Y_3).

4) Farmers' Income: Measurable indicators used in maize farmers' income are land area ($X_{1.1}$), production ($X_{1.2}$) and labor ($X_{1.3}$). Test results with confirmatory factor analysis were presented in Fig. 4.
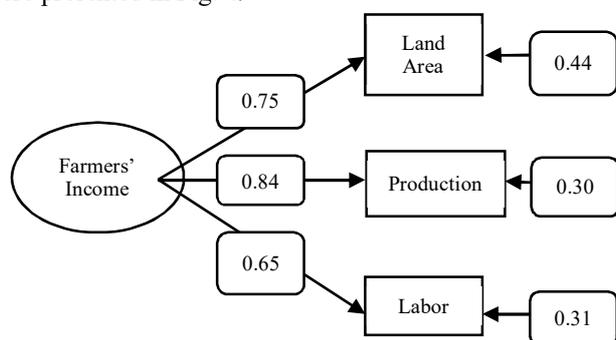

Fig. 4 Load value of farmers' income variables

The factor load value on three indicators was above 0.5 in the order of production (0.84), land area (0.75), and labor (0.65). Thus, the three measured variables of land area ($X_{1.1}$), production ($X_{1.2}$) and labor ($X_{3.3}$) can be used to measure farmers' income (X_1). The result of SEM is presented in Table 1.

TABLE 1

ANALYSIS OF DIRECT AND INDIRECT EFFECT OF SOCIAL CAPITAL, SUPPLY CHAIN, COMPETITIVE ADVANTAGE ON MAIZE FARMERS' INCOME

Relationship Structure	Coef.	T count.	T Table	P-value	Information
Direct Effect					
X_1 to Y_3	0.078	1.977	1.96	0.056	Non-Sig.
X_1 to Y_1	0.414	2.155	1.96	0.001	Sig.
X_1 to Y_2	0.021	2.011	1.96	0.000	Sig.
Y_1 to Y_3	0.231	2.536	1.96	0.001	Sig.
Y_2 to Y_3	0.022	2.121	1.96	0.001	Sig.
Indirect Effect					
X_1 to Y_3 through Y_1	0.211			0.001	Sig.
X_1 to Y_3 through Y_2	0.728			0.001	Sig.

Note: direct impact; X_1 to Y_3 = farmers' income to competitive advantage; X_1 to Y_1 = farmers' income to social capital; X_1 to Y_2 = farmers' income to supply chain; Y_1 to Y_3 = social capital to competitive advantage; Y_2 to Y_3 = supply chain to competitive advantage. Indirect impact; X_1 to Y_3 through Y_1 = farmers' income to competitive advantage through social capital and X_1 to Y_3 through Y_2 = farmers' income to competitive advantage through the supply chain.

B. The Influence of Social Capital on the Farmers' Income

Social capital was formed from three dimensions construct of trust (0.618), social network (0.619) and norm (0.617). All coefficients had a positive effect with almost the same values between the three construct dimensions, and there is a significant relationship in social capital, in this case, social network and farmers [9]. Social capital was formed and influenced by trust constructs with openness indicators between farmers' trust with other farmers and farmers' trust with traders. Indicators of social networks made up by social

capital which collaborative networks were established between farmers and traders. Meanwhile, norms were formed from indicators of understanding the community's existing rules and farmers' willingness to accept sanctions if they violate norms.

Through the dimensions of trust, social capital and norm had a positive influence on farmers' income, but the influence was still lacking and required support from other variables. The lack of social capital influence was due to the new dimension of social capital that had formed a positive attitude. It had not directly influenced to increase farmers' income through the increase of production.

Trust, social network and norm had a positive influence on the formation of attitudes that influence the use of joint labor in cooperation in maize cultivation, during harvesting and loaning agricultural equipment. However, this was not enough to increase maize production. Social capital had provided the basis for the farming community to the ability to control the use capital of environmental, physical, economics, human, politics and information. It this case, social capital could not be the main determining factor in increasing economic capital or income. It needs to be supported by other variables such as environment capital, human capital, political capital and information capital [10]. Moreover, local governments need to strengthen farmers' social capital to empower the economies and a strong social capital level to reduce poverty significantly [11]. Social capital did not directly influence farmers' income but through a change in attitudes and knowledge in agribusiness development efforts, which lead to improved farmers' welfare. Further information, social capital considered about facilitator of knowledge search and knowledge sharing activities, and it was also crucial for the capital in agriculture innovation. The better the application of internal social capital, the higher performance can be achieved [12]. Condition of social capital among farmer communities could not support the performance of farmer collectivity due to financial trauma. The absence of these collectivities made production capacity, quality, and continuity expected to compete in the modern market. Production costs also became inefficient, and the welfare of farmers was very low. So, social capital was not an easy thing to be immediately repaired or formed suddenly. Social capital is formed slowly, gradually, and requires an extended period. Nevertheless, social capital can be leaded from various forms that can sustain the program [13], including agricultural activities.

C. The Influence of Social Capital on the Supply Chain

In this study, social capital was formed from three dimensions construct of trust (0.618), social network (0.619) and norm (0.617). All coefficients had a positive effect with almost the same values between the three construct dimensions. Social capital was formed and influenced by trust constructs with openness indicators between farmers' trust with other farmers and farmers' trust with traders. Indicators of social networks that make up social capital were collaborative networks that were established between farmers and traders. Meanwhile, norms are formed by indicators such as how maize farmers understand norms accept sanctions if they violate norms. Therefore, the excellent application of social capital among trust, social network and norm will make

maize farmers work together to plant maize with high-quality seeds according to market needs.

The descriptive analysis results showed that 89.2% of farmers stated that they had planted maize varieties according to demand. Farmers gave confidence to traders to measure harvest yields and levels of maize water produced. The intertwined cooperation had also caused traders to provide loans in the form of venture capital because they believed that farmers would sell the harvest to traders and be calculated with the loans that had been given.

Although maize produced by farmers is not reaching national productivity standards, which only produce 2-5 tons per hectare, maize's water content was under market requirements. The lower the moisture content of maize, the higher the price. Social capital played an important role in rural communities. The involvement of rural organizations by creating small businesses scale and network of collaboration among stakeholders became a vital element to support the social capital. This process was successfully done by intervened facilitators who support the rural community, including maize farmers.

D. The Influence of Social Capital on the Competitive Advantage

The coefficient of social capital variables' influence on competitive advantage was 0.021, with a t-value of 2.011 and a probability lower than 0.05. The results of the confirmatory analysis showed that the cost leadership (0.840) became the highest factor load on the competitive advantage variable, followed by product focus (0.830) and differentiation (0.750). Through trust, social capital played a significant position in creating an open attitude and sharing in technical cultivation among farmers. The collaboration was carried out to assist in planting, harvesting, borrowing, and farming equipment. This condition strongly supported the cost-efficiency in maize cultivation.

Social capital facilitated various knowledge-sharing, value creation, competitive advantage, better performance, and organizational development. Simultaneously, the concept of competitive advantage and social capital capabilities in companies and concluded that the company's marketing performance that was determined by the level of competitive advantage depended heavily on the social capital that it owns and develops. The best practice of social capital will lead to the competitive advantage of Indonesian maize. Cost leadership, product differentiation, and focus products are necessary to achieve highly competitive maize to reach potential producers, both national and international markets [14].

E. The Influence of Supply Chain on the Farmers' Income

The coefficient of influence of supply chain variables on farmers' income was 0.231 with a t-value of 2.536 and a probability of less than 0.05. Supply chain variables had a positive and significant effect on farmers' income. It shows that increasing the supply chain will be followed by increasing farmers' income, assuming other factors that affect the farmers' income are considered constant. Additionally, supply chain variables had a positive and significant influence on farmers' income.

The flow of goods and money as the main factor contributed to the formation of the supply chain that is positively correlated, one of the roles in increasing farmers' income, and the best thing is increasing production first. Maize production was strongly influenced by the availability of good seeds, good maintenance with fertilizers and pesticides that run smoothly. Maize production became the highest factor load as the construct forming farmers' income variable was equal to 0.840.

Good implementation of the supply chain to the farmers would prevent risk factors of agricultural products. At the same time, it connects to the information system, sharing and feedback to maintain optimization of supply chain connection by using big data system [15]. It is necessary to optimize food and agricultural product distribution [16]–[19]. It is to increase farmers' income and reduce postharvest loss by the best practice of supply chain management [20].

F. The Influence of Competitive Advantage on the Farmers' Income

The coefficient of influence of competitive advantage variables on farmers' income was 0.022 with a t-value of 2.121 and a probability value below 0.05. It showed variable competitive advantage had a positive and significant effect on farmers' income. So that increasing competitive advantage would be followed by an increase in farmers' income, assuming other factors that affect the number of farmers' income were considered constant.

Among the three variables observed from the competitive advantage latent variable, cost leadership had the highest factor load than focus and differentiation. Cost leadership in the form of cost efficiency had the most significant role in increasing farmers' income. This study's results were supported by the farmers' attitudes shown from the results of descriptive analysis. 55.8% of maize farmers were able to reduce to use a minimal cost to lower their production costs than other farmers. Farmers carried out low production costs with the use of their capital, the use of cheap and effective pesticides and buying production facilities that are genuinely under the need to avoid waste.

Competitive advantage is about how farmers choose and apply appropriate strategies within farming application system in which focus is one of the complete strategies in implementing competitive advantage [14]. Focus differentiation and low cost are the main strategies for products [21], which maize is Indonesia's superior agricultural products. To increase competitive performance, the government needs to utilize domestic maize's competitiveness to reduce imports that continue to increase production year by year. At present, the domestic maize production was still low compared to the consumption required.

G. The Influence of Social Capital to the Farmers' Income through Supply Chain as Intervening Variable

The influence of social capital on farmers' income through the supply chain was 0.211, with a probability value less than 0.05. Supply chain as an intervening variable positively strengthened the influence of social capital on farmers' income. Thus, the social capital that developed and became a binder between farmers needs to be supported by a well-functioning supply chain.

The supply chain can function well in three ways. First, the flow of goods through increasing the suitability of the type, quantity, and quality of maize produced follows market needs and demands. Second, information flow through increased access and optimal market information, both at the farm level and other related marketing institutions. So, there is no missing information from upstream to downstream. Third, the flow of money through increasing the suitability of average market prices are received by farmers. It is also necessary to guarantee an effective payment system at the farm level because most farmers did not have easy access to existing financial institutions, either banks or other financial institutions. Hence, the flow of goods, information, and money were interesting and modern supply chain perspective [22].

The maize supply chain's role in strengthening the influence of social capital on farmers' income was still possible to be increased. It could be seen from the coefficient of the influence of social capital on the supply chain that reached 0.414 had the highest value among all direct influence coefficients both the direct influence of social capital on farmers' income and influence of social capital on competitive advantage. Unfortunately, when it became an intervening variable of social capital on farmers' income, the value of coefficients had a lower effect when compared through competitive advantage.

Social capital that had been realized both trusts, social network and norm could bridge a better relationship with traders. The main improvement in this bridging process was that the flow of information between farmers and traders was still shallow. It could be seen from the low load of the flow of information factor (0.52) compared to the flow of goods (0.65) and the flow of money (0.64). The results of the descriptive analysis of maize farmers assumptions showed that the flow of information had not run optimally from farmers to traders or vice versa.

The flow of information, as indicated by the information needed among supply chain actors. The results of interviews with maize farmers showed that 67.5% of farmers did not provide information to the market regarding the harvest time and total of maize produced. Farmers who stated that they had informed their harvest time were only 4.2%. Also, the descriptive analysis results also showed that farmers have not received accurate information about the ideal harvest time according to the market needs of the traders.

Even though this information is needed to set the planting time, farmers' information is limited only from other farmers; hence, it was less accurate. No information was conveyed from farmers to the market or vice versa, due to lack of access between farmers and traders and lack of intensive communication between two parties. Another case, supply chain performance measurement with a marketing efficiency approach showed that the most sought-after channel for a marketing channel that involves farmers - retailers - end consumers [23].

Thus, to increase the supply chain's influence as an intervening variable on social capital through farmers' income, it was necessary to improve the flow of information. Improvement efforts were made by facilitating farmers access to traders and intensifying meetings between them. Policymakers can play a role as facilitators of this effort. The information system is one of the critical factors to increase supply chain performance. So that, in the industry 4.0 era, the

agricultural concept needs to adopt technology and a new concept of supply chain system for the best practice in the future [24].

H. The Influence of Social Capital to the Farmers' Income through Competitive Advantages as Intervening Variable

The influence of social capital on farmers' income through the supply chain was 0.728, with a probability lower than 0.05. Competitive advantage as a positive intervening variable strengthened the influence of social capital on farmers' income. This coefficient value also showed that competitive advantage has the most strengthening role in farmers' income compared to the supply chain. This result implies that maize farmers' social capital in Jeneponto Regency was essential and cannot be ignored. Social capital will have a greater influence if there is optimal synergy with a competitive advantage.

Field observations indicated that cost leadership was a performance aimed at reducing costs in order to generate high profits. Based on descriptive analysis, 55.8% of maize farmers were able to reduce costs, so that the production costs would be lower. Even so, there were still 16.7% who were unable to reduce their costs efficiently. Cost efficiency was one of the uses of workers who came from their own families. The average dependents in one family range from 5 to 8 people. Also, farmers' habits to work together when planting and harvesting, they borrowed of agricultural equipment such as borrowing hand tractor without payment.

One of the critical factors to determine success in today's competition was to increase its competitive advantage. The strategic alliance conducted by two or more companies in producing a product could reduce the burden of costs and shorten the time and accelerate the production process. So, the products produced remain innovative can reach consumers, then to provide benefits for the company.

The competitive advantage would be a tremendous driving force for social capital to increase income. It can be optimized by increasing farmers' ability to spend energy, time, and an efficient source of capital. Farmers need to produce a new different variety of maize. However, producing superior and excellent maize to reach both for the potential national and international markets is more important. A well-known variable of the developed country is signed with competitive performance [25]. The government should understand how to place their competitive products as an effect of business and economic growth competing to the international market [26].

IV. Conclusion

This study revealed that social capital through the dimensions of trust, social network, and norm positively influenced farmers' income. However, the influence was not significant and required support from other variables. Social capital also had a significant impact on the supply chain; thus, increasing social capital would be followed by increasing the supply chain. Social capital had a significant and positive influence on the competitive advantage of whether supply chain had a positive and significant effect on farmers' income. In the last, supply chain as an intervening variable significantly strengthened the influence of social capital on maize farmers' income. A competitive advantage as an intervening variable strengthened the influence of social capital on maize farmers' income.

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