
**The Influence Of Social Capital On The Productivity Of Lettuce Farmers
(Case Study Of Lasinrang Hydroponic Community Pinrang District)****Irmayani¹, Heru Maizanur², Ikbal Putera³**^{1,2,3}Faculty Agriculture, Animal Husbandry and Fisheries Universitas Muhammadiyah Parepare,
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ABSTRACT. Hydroponic farming is a promising alternative to increase agricultural productivity and sustainability in Indonesia. In Pinrang district, the Lasinrang hydroponic community has successfully implemented this method, with farmer-to-farmer collaboration, knowledge sharing, and involvement in community activities forming a solid network of mutual support. Despite this success, lettuce farmers still face problems such as lack of effective cultivation knowledge, limited access to quality seeds and fertilizers, and constraints in obtaining profitable markets. Therefore, this study recommends overcoming these problems by strengthening social capital to increase the productivity of lettuce farmers in the Lasinrang Hydroponic community. This study aims to determine the effect of social capital both partially and simultaneously on the productivity of lettuce farmers in Lasinrang hydroponic community, Pinrang Regency. This research uses a quantitative descriptive approach. Data collection techniques using questionnaires, interviews, observation and documentation, while data analysis techniques using multiple linear analysis. The results showed that: (1) the trust variable has no positive effect on the productivity of lettuce farmers (2) the social network variable has no positive effect on the productivity of lettuce farmers (3) the social norm variable has no positive effect on the productivity of lettuce farmers (4) the trust variable, social network, social norms have no positive effect together on the productivity of lettuce farmers.

Keywords : *Social Capital, Productivity, and Lettuce Farmers*

INTRODUCTION

Agriculture plays a crucial role in food sustainability, economic prosperity and environmental protection in Indonesia. As a country with abundant agricultural resources, Indonesia faces various challenges in achieving sustainable agriculture. Climate change, land degradation, vulnerability to natural disasters, and demographic changes are some of the major issues affecting agriculture in the country. (Anyualatha, 2021).

In this context, hydroponic farming has become a promising alternative in the effort to increase agricultural productivity and sustainability. this method involves growing plants in a nutrient solution without using soil as a growing medium. This reduces dependence on limited agricultural land and can improve water and nutrient use efficiency.

In Pinrang District, the Lasinrang hydroponic community has become a successful example of hydroponic farming. This community consists of lettuce farmers who work together to develop efficient and sustainable cultivation techniques. In this context, social capital plays an important role in improving farmer productivity and agricultural sustainability.

Social capital is a context that involves the network of social relationships, social norms, trust and social networks within a community. In the context of Lasinrang hydroponic farming, social capital refers to collaboration among farmers, sharing of knowledge and experience, and involvement in community activities that facilitate the exchange of information and resources.

The Lasinrang hydroponic community has strong social capital. Lettuce farmers work together to develop cultivation techniques, help each other overcome problems and challenges, and share knowledge and experience. They form a solid and mutually supportive social network, with social norms that encourage collaboration and togetherness.

Social capital also affects lettuce farmers' access to necessary resources, such as quality seeds, fertilizers and hydroponic equipment. Collaboration within the community enables them to obtain these resources more easily and efficiently. Trust between farmers also facilitates the exchange of information on best farming practices, problem solving and market opportunities.

Although the Lasinrang hydroponic community has achieved success in hydroponic farming, lettuce farmers may still face some issues related to lack of productivity. These issues may

hinder the ability of lettuce farmers to reach their maximum potential in production and profit. Some of the problems that may be faced by lettuce farmers in this community include:

1. Lack of knowledge on effective cultivation techniques: Lettuce farmers may not have fully mastered effective hydroponic cultivation techniques. This can affect their productivity due to lack of understanding on proper nutrition, water management, and pest and disease control.
2. Limited access to quality seeds and fertilizers: Lettuce farmers may face limitations in obtaining quality lettuce seeds and fertilizers that are suitable for hydroponic needs. This can affect plant growth and health as well as final productivity.
3. Constraints in obtaining a profitable market: Lettuce farmers may face difficulties in selling their products at favorable prices. Limited market access and lack of market knowledge may affect the competitiveness of lettuce farmers' products.

Through this research, the effect of social capital on the productivity of lettuce farmers in the Lasinrang hydroponic community will be analyzed. Data will be collected through surveys, interviews and observations of lettuce farmers in the community. Data will be analyzed to determine the relationship between social capital and productivity of lettuce farmers and to identify the most influential social capital factors.

It is expected that the results of this study can provide a deeper understanding of the role of social capital in improving the productivity of lettuce farmers in the context of Lasinrang hydroponic farming. The recommendations generated from this research are expected to be used to strengthen social capital in other hydroponic farming communities, address the productivity issues of lettuce farmers, and encourage better agricultural sustainability overall. The purpose of this study is to determine the extent of the influence of social capital on the productivity of lettuce farmers in Pinrang district.

MATERIALS AND METHODS

The research was conducted in Pinrang Regency. The research was conducted from August 2022 to October 2022. Population and Sample. According to Sugiyono (2015) Population is a generalization area consisting of objects / subjects that have certain qualities and characteristics that are applied by researchers to study and then draw conclusions. The population in this study were 14 (Fourteen) farmers who are members of the lasinrang hydroponic community.

The data analysis used in this study is to use a quantitative descriptive approach method using multiple linear analysis tools to test the influence model or the relationship of more than two independent variables on the dependent variable. After obtaining research data in the form of ordinal and nominal data, then tabulate the data. Then, to equalize the existing scale, the process carried out is to transform ordinal and nominal data into interval data. The transformation process carried out is the MSI process (successive interval method). MSI is one of the data transformation methods that is often used to increase the measurement scale from ordinal to interval. (Safiera and Setyawan, 2017).

In this method, sequential variable data is broken down into contiguous intervals. Each interval is then analyzed separately, and the analysis results obtained from each interval will be linked back to form a more thorough understanding of the data. (Ningsih and Dukalang 2019). After turning into intervals, data processing will be carried out with multiple linear analysis and hypothesis testing.

RESULTS AND DISCUSSION

Respondent Identity

Demographically, the characteristics of respondents are classified into several criteria including gender, age of respondents and the latest education carried out by each respondent. Based on the information that has been obtained during data collection, the characteristics of the respondents will be presented in detail as follows:

a. Characteristics of Respondents Based on Gender

A description of the characteristics of respondents based on gender can be seen in the following table:

Table 1. Characteristics of Respondents Based on Gender

Gender	Frequency	Percentage
Male	13	97%
Female	1	13%
Total	14	100%

Source: *Primary Data Processed 2023*

Table 1 is known. The characteristics of respondents based on gender were 97% male and 13% female, so it can be concluded that the majority of lettuce farmers who are members of the Lasinrang hydroponic community are male.

This is due to social traditions and perceptions that farm work is more suitable for men. In addition, access to hydroponics education and training may also be more difficult for women, resulting in fewer women choosing to work in this field.

b. Characteristics of respondents based on age

A description of the characteristics of respondents based on age can be seen in the following table:

Table 2. Characteristics of Respondents Based on Age

Gender	Frequency	Percentage
21-25 years old	1	7%
26-30 years old	8	57%
31-35 years old	3	21%
36-40 years old	2	14%
Total	14	100%

Source: *Primary Data Processed 2023*

c. Characteristics of respondents based on education level

The description of the characteristics of respondents based on the last level of education can be seen from the following table:

Table 3. Response Characteristics Based on Last Education Level

Education Level	Frequency	Percentage
SD	0	0%
SMP	1	7%
HIGH SCHOOL	4	29%
College	9	64%
Total	14	100%

Source: *Primary Data Processed 2023*

Based on table 3 It can be concluded that the respondents' last education at the elementary level was 0%, the last education at the junior high school level was 7%, the last education at the high school level was 29% and the last education at the college level was 69%. It can be concluded that the majority of lettuce farmers who are members of the

lasinrang hydroponic community who are respondents have the last education at the tertiary level.

The majority of farmers with tertiary education choose to engage in hydroponics because they are more technologically savvy and better able to exploit existing potential. But keep in mind that hydroponics also has higher costs and complexity compared to traditional farming. Farmers with a university degree and sufficient resources will be better able to manage hydroponics well.

Description of Research Variables

This study consists of 3 independent variables, namely trust, social networks and social norms while the dependent variable is productivity. This sub chapter will explain the description of respondent data based on each variable generated from the questionnaire. The data obtained has been transformed with MSI (*successive interval method*).

1. Trust

The acquisition of data on the trust variable was obtained through the results of distributing instruments to 14 lettuce farmers. The results of these answers in MSI and sought the average answer on each respondent. Based on the data on the trust variable of each respondent obtained a maximum value of 4,270 and a minimum value of 1,000. Then the ideal calculation (Mi) and the ideal standard deviation (SDi) then with the following tendency table formula:

Table 4. Trust Variable Categories

Interval	Frequency	Percentage	Score
> 4,400	0	0%	Very High
3,406-4,400	5	36%	High
2,412-3,406	6	43%	Medium
1,418-2,412	2	14%	Low
≤ 1,418	1	7%	Very Low
Total	14	100%	

Source: *Primary Data Processed 2023*

Based on table 4, it is known that the predicate is very high, namely with an interval of > 4,400 as many as 0 respondents (0%), high predicates with an interval of 3,406-4,400, namely as many as 5 respondents (36%), moderate predicates with an interval of 2,412-3,406, namely as many as 6 respondents (43%), low predicates with an interval of 1,418-2,412, namely as many as 2 respondents (14%), and very low predicates with an interval ≤ 1,418, namely as many as 1 respondent (7%). So, it can be concluded that most respondent lettuce farmers have a moderate level of trust, namely 43%.

2. Social network

Data on social network variables were obtained through the distribution of instruments to 14 lettuce farmers. The results of the answers were then in MSI and sought the average answer of each respondent. Based on the data on the social network variables of each respondent obtained a maximum value of 4,489 and a minimum value of 1,000. Then the calculation of the ideal average (Mi) and the ideal standard deviation (SDi) then with the variable tendency table formula can be arranged the distribution of the tendency category as follows:

Table 5. Social Network Variable Categories

Interval	Frequency	Percentage	Score
> 4,423	2	14%	Very High
3,414-4,423	2	14%	High
2,404-3,414	5	36%	Medium
1,395-2,404	4	29%	Low
≤ 1,395	1	7%	Very Low
Total	14	100%	

Source: *Primary Data Processed 2023*

Based on table 5, it is known that the predicate is very high, namely with the interval > 4,423 as many as 2 respondents (14%), high predicate with the interval 3,414-4,423 as many as 2 respondents (14%), medium predicate with the interval 2,404-3,414 as many as 5 respondents (36%), low predicate with the interval 1,395-2,404 as many as 4 respondents (29%), and very low predicate with the interval ≤ 1,395 as many as 1 respondent (7%). So it can be concluded that most lettuce farmers have a moderate level of social network, namely 36%.

3. Social norms

The acquisition of data on social norm variables is obtained through the results of distributing instruments to 14 farmers. The results of the answers were MSI and sought the average answer on each respondent. Based on the data on the social norms variable, each respondent obtained a maximum value of 4,489 and a minimum value of 1,000. Then the calculation of the ideal average (Mi) and standard deviation (SDi) then with the variable tendency table formula can be arranged the distribution of the tendency category as follows:

Table 6. Social Norms Variable Categories

Interval	Frequency	Percentage	Score
> 4,426	2	14%	Very High
3,415-4,426	2	14%	High
2,404-3,415	7	50%	Medium
1,392-2,404	2	14%	Low
≤ 1,392	1	7%	Very Low
Total	14	100%	

Source: *Primary Data Processed 2023*

Based on table 6, it is known that the predicate is very high, namely with the interval > 4,426 as many as 2 respondents (14%), high predicate with the interval 3,415-4,426 as many as 2 respondents (14%), moderate predicate with the interval 2,404-3,415 by 7 respondents (50%), low predicate with the interval 1,392-2,404 by 2 respondents (14%), and very low predicate with the interval ≤ 1,392 by 1 respondent (7%). So, it can be concluded that most respondent farmers have a moderate level of social norms, namely 50%.

4. Productivity

Acquisition of data on variables obtained through the calculation of documented data in the form of area and essay questions on the questionnaire, land area (m²) divided by the last harvest (Kw), the result becomes the productivity of each respondent totaling 14 farmers. Based on the data of farmer productivity variables obtained the results of the analysis showed

a maximum value of 4.489 and a minimum value of 1.000. Furthermore, the calculation of the ideal average (Mi) and standard deviation (SDi) then with the formula of the variable tendency table can be arranged category distribution of the tendency as follows:

Table 7. Farmer Productivity Categories

Interval	Frequency	Percentage	Score
> 4,102	2	14%	Very High
3,087-4,102	2	14%	High
2,072-3,087	6	43%	Medium
1,057-2,072	3	21%	Low
≤ 1,057	1	7%	Very Low
Total	14	100%	

Source: *Primary Data Processed 2023*

Based on table 7, it can be seen that the productivity of farmers in the very high predicate with the interval .4,102 as many as 2 farmers (14%), high predicate with the interval 3,087-4,102 as many as 2 farmers (14%), moderate predicate with the interval 2,072-3,087 as many as 6 farmers (43%), low predicate with the interval 1,057-2,072 as many as 3 farmers (21%), and very low predicate with the interval ≤ 1,057 as many as 1 farmer (7%). So, it can be concluded that the tendency of the productivity variable is in the medium category with a total of 6 farmers (43%).

Multiple Linear Regression Test Results

Multiple linear regression tests were carried out with the help of *SPSS 21*. The following are the results of multiple linear regression tests:

Table 8. Multiple Linear Regression Output

Model	Unstandardized coefficients		T	SIG
	B	Std. Error		
(Constant)	-0,826	5,332	-0,155	0,880
Trust (X1)	0,073	0,087	-0,838	0,421
Social Network (X2)	0,048	0,094	0,504	0,625
Social Norms (X3)	0,084	0,089	0,940	0,369

Source: *Primary Data Processed 2023*

The model used in determining the model is :

$$y = a + b x + b_{1\ 1\ 2} x_2 + b x_{33} + e$$

From the multiple linear regression results in the output table 8. a regression equation can be formulated as follows:

$$Y = (-0.826) + (0.073) X_1 + (0.048) X_2 + (0.084) X_3 + e$$

The interpretation of the equation result is :

a = The regression constant value of -0.826 indicates the value of the productivity of lettuce farmers in the Lasinrang hydroponic community is 0.826. If other variables, namely independent variables (trust, social norms and social networks) are equal to zero or constant value. This also means that the productivity of lettuce farmers is only -0.826 before the existence of external factors, namely social capital.

B $X_{1\ 1}$ = 0.073 Indicates a positive slope or positive direction coefficient for the trust

variable (X_1). So it can be interpreted that if trust increases by 1 index unit, then the productivity of lettuce farmers will increase by $-0.073 \text{ kg} / ^2$ / harvest with the assumption that other variables are constant. This means that if trust is higher, then the productivity of lettuce farmers will be higher.

$B X_{2.2} = 0.048$ shows a positive slope or positive direction coefficient for the social network variable. So it can be interpreted that if the social network increases by 1 unit of index. Then farmer productivity will increase by 0.048 kg/m^2 /harvest assuming other variables are constant. This means that if the social network is higher, the productivity of lettuce farmers will be higher.

$B X_{3.3} = 0.084$ shows a positive slope or positive direction coefficient for the social norm variable. It can be interpreted that if the social network increases by 0.084 kg/m^2 /harvest with the assumption that other variables are constant. This means that if social norms are higher, then the productivity of lettuce farmers will be higher as well.

Hypothesis Testing

The T test and F test are two types of statistics used to evaluate the compatibility of the hypothesis with the research results. The T test aims to determine whether there is a partial influence of the independent variable on the dependent variable, while the F test aims to determine whether there is a simultaneous relationship between the independent variable and the dependent.

1. T test

The T test is a test to show the effect of the independent variables in the model on the dependent variable individually. This is intended to determine how far the influence of the independent variable is in explaining the dependent variable. To show the individual effect of the independent variable on the dependent variable, it can also be seen from its significance value. the test results in this study are as follows:

Table 9. Summary of T test results

Variables	Thitung	T _{tabel}	Significance
X_1	-0,838	2,228	0,421
X_2	0,504	2,228	0,625
X_3	0,940	2,228	0,369

Source: *Primary Data Processed 2023*

Based on the number of respondents, namely 14 lettuce farmers, the value of $df = 10$ is known, then the t table is 2.228 at the real level of 5%. If $t \text{ count} > t \text{ table}$ or $t \text{ count}$ or sig value < 0.05 means H_a is accepted and H_0 is rejected and vice versa. Then the results of the hypothesis test are as follows:

1. First hypothesis

The first hypothesis states that there is no real influence and positive influence between the trust variable on the productivity of lettuce farmers. Based on the results of partial calculations, the regression coefficient (b_1) is -0.073 , at a significance level of 5%, it can be seen that the t count is $-0.838 < 2.228$ and a significance value of $0.421 > 0.05$ because the regression coefficient is not positive, then the first hypothesis which reads "The trust variable has no positive and significant effect on the productivity of lettuce farmers in Pinrang district" H_a is rejected and H_0 is accepted.

2. Second hypothesis

The second hypothesis states that there is no real influence and positive influence between social network variables on the productivity of lettuce farmers. Based on the partial calculation results, the regression coefficient (b_2) is 0.048. At the 5% significance level, it can be seen that the t count is $0.504 < 2.228$ and the significance value is $0.625 > 0.05$ because the regression coefficient is not positive, so the second hypothesis which reads "Social network variables do not have a positive and significant effect on the productivity of lettuce farmers in Pinrang district" H_a is rejected and H_0 is accepted.

3. Third hypothesis

The third hypothesis states that there is no real and positive influence between social norms variables on the productivity of lettuce farmers. Based on the results of partial calculations, the regression coefficient (b_3) of 0.084 at a significance level of 5% can be known t count of $0.940 < 2.228$ and a significance value of $0.369 > 0.05$ because the regression coefficient is not positive then, the third hypothesis which reads "Social network variables do not have a positive and significant effect on the productivity of lettuce farmers in Pinrang Regency" H_a is rejected and H_0 is accepted.

2. F test

The F test is conducted to test whether the independent variables together can affect the dependent variable. It aims to test how far the influence of independent variables on the dependent variable. The fifth hypothesis states that there is no positive influence of trust, social norms and social networks on the productivity of lettuce farmers. Based on the results of the F test conducted, the results obtained F count of 0.631. While the F table value is 3.34. It can be seen that the value of F count $<$ F table ($0.631 < 3.34$). Thus it can be concluded that H_0 is accepted and H_a is rejected. This means that the independent variables of trust (X_1), social networks (X_2) and social norms (X_3) together do not significantly affect the productivity of lettuce farmers in Pinrang district.

3. Test the coefficient of determination (R^2)

The coefficient of determination test is carried out with the aim of measuring the ability of the model to explain how influential the independent variables (trust, social norms and social networks) affect the dependent variable (productivity of lettuce farmers) which can be indicated by the R-squared value. (Ghozali, 2016).

CONCLUSION

Based on the data obtained from the results of the analysis carried out, the following conclusions can be drawn:

1. There is no positive and significant influence between trust and productivity of lettuce farmers in Pinrang district. This can be shown by the t value of -0.083, the regression coefficient (b_1) of -0.073 and a significance value of 0.421. Since the significance value (p) $>$ 0.05 and the regression coefficient has a negative value, it can be concluded that there is no positive influence of trust on the productivity of lettuce farmers in Pinrang district. Because it is a new community, members may not yet have strong social relationships and trust in each other has not been fully established. The process of building trust and strong social relationships requires time and more interaction among community members.
2. There is no positive and significant influence between social networks and productivity of lettuce farmers in Pinrang district. This can be shown by the calculated

t value of 0.504, the regression coefficient (b2) of 0.048 and a significance value of 0.625. Because the significance value (p) > 0.05 and the regression coefficient has a negative value, it can be concluded that there is no positive influence of social networks on the productivity of lettuce farmers in Pinrang district. As a new community, members may not have well-structured social networks and community members are more likely to focus on individual interests and efforts in their production. This leads to a lack of cooperation and interdependence among lettuce farmers, so social networks have a more limited influence on their productivity.

3. There is no positive and significant influence between social norms and productivity of lettuce farmers in Pinrang district. This is indicated by the t value of 0.940, the regression coefficient (b3) of 0.084 and a significance value of 0.369. Because the significance value (p) > 0.05 and the regression coefficient has a negative value, it can be concluded that there is no positive influence of social norms on the productivity of lettuce farmers in Pinrang district. Since the lasinrang hydroponic community is a new community, traditions and habits related to the production of lettuce farmers have not yet been formed or have not had a significant influence on production patterns. production decisions may be more influenced by technical considerations, resources, or available information than social norms.
4. There is no significant positive influence between trust, social networks and social norms on the productivity of lettuce farmers. This can be shown from the results of F count of 0.631, the significance value reached 0.611 or > 0.05 and the coefficient of determination R^2 of 15.9%. Because the lasinrang hydroponic community is newly formed, there may still be a process of forming and developing these social factors. Trust and relationships between members may not yet be fully established, social norms may not yet be well established, and social networks may not yet be well formed. As a result, these social factors may not have had a significant impact on the productivity of lettuce farmers in the early stages of community formation.

Advice

Future research is expected to overcome the limitations of the initial research by expanding the sample size, expanding the scope of variables, and collecting qualitative data. With this approach, the research will provide a more complete and in-depth understanding of the role of social capital in improving productivity.

The Lasinrang hydroponic community needs to develop a strategic plan for a more focused use of social media. This includes determining the most effective and popular social media platforms among the people of Pinrang Regency, as well as compiling relevant and interesting content to increase public awareness about hydroponics and the Lasinrang hydroponic community.

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