# The Influence of Social Capital on Corn Productivity: Empirical Evidence of Female Farmers in Sumenep Regency, Indonesia

**Anggie Putri Deswitanti, Moh. Wahyudi Priyanto[*], Taufik Rizal Dwi Adi Nugroho**

Department of Agribusiness, Faculty of Agriculture, Universitas Trunojoyo Madura, Raya Telang Road, Bangkalan (69162), Indonesia

[*]Corresponding author e-mail: wahyudi.priyanto@trunojoyo.ac.id

## ABSTRACT

Corn production in Bragung Village, Guluk-Guluk Subdistrict, tends to be fluctuating, but the consumption of corn continues to increase. The fluctuation in corn production is not necessarily due to climate change, which is a hindering factor to achieve 80% of the national corn production contribution. Therefore, efforts are needed to increase corn production by considering social capital through bonding, bridging, and linking roles. The purpose of this research is to determine the influence of social capital on corn productivity in Bragung Village, Guluk-Guluk Subdistrict, Sumenep Regency, Madura. Data collection was carried out through observation and interviews by filling out questionnaires. The research method used is ordinary least squares analysis (OLS) on 71 female farmers selected through simple random sampling. The analysis results show that factors that have a significant and positive influence on corn productivity are bonding, education, and experience. Factors that do not have a significant impact are bridging, linking, age, and sales quantity. Based on the research results, efforts that can be made to increase corn productivity include strengthening relationships, especially in corn farming, such as discussing and helping each other.

Keywords: corn; productivity; social capital; sumenep

**How to cite:**

## 1. Introduction

Corn is one of the largest agricultural sectors in Indonesia, alongside rice. Based on the 2020 data from the Central Statistics Agency, East Java was able to produce 5.73 million tons of corn from 1.19 million hectares, then increased by 16.2% in 2021, reaching 7.32 million tons in 2022. Sumenep is one of the regencies in East Java that contributes 30% to the national corn production. This fact is supported by the corn productivity in Sumenep Regency, which was 32.29 Kw/Ha in 2019. However, it experienced a 6.9% decrease to 31.37 Kw/Ha in 2022 (BPS Sumenep, 2023). Additionally, the Sumenep Regency government hopes that Sumenep can contribute 80% to the national corn production (Media Center, 2023). However, corn production in Sumenep Regency fluctuates, including in the Guluk-Guluk District. In 2020, Guluk-Guluk District had a production of 25 thousand tons, while in 2021, it decreased by 40% to 17 thousand tons (BPS Sumenep, 2023). Therefore, efforts are needed to increase corn production in the Guluk-Guluk District of Sumenep Regency, which is a center for corn production.

The decrease in corn production is attributed to climate change, as indicated by precipitation, temperature, wind velocity, and an uncertain change of season (Priyanto et al., 2023). According to Wang et al. (2019), the decline in corn productivity can be caused by the length of the dry season and high rainfall, resulting in waterlogging that disturbs corn plant growth. The impact of climate change is also emphasized in previous research, stating that each 1°C increase in temperature can lead to a reduction in maize productivity of up to 10% (Raza et al., 2019). The issue of declining corn production needs attention, as

corn is rich in nutrients, leading to a continuous increase in demand (Grote et al., 2021). Based on Suprapti et al. (2023), it is mentioned that most corn in Madura is used for animal feed and consumption. This aligns with (Setiani et al., 2022), where corn is a staple food in Madura due to its greater filling capacity and lower cost compared to rice. Additionally, corn consumption is also rooted in long-standing habits that cannot be easily eliminated. The Community Health Center (Puskesmas) observes that the consumption of corn can be influenced by economic factors, as corn cultivation constitutes a primary source of livelihood for both male and female farmers. Individuals tend to pay particular attention to this staple food, especially during economic shocks, such as the COVID-19 pandemic (Harris et al., 2020).

Female farmers in corn farming in the Guluk-Guluk District have a considerable number, as evidenced by the numerous Women Farmers Groups (KWT). According to Hakim et al. (2021), the percentage of women and men aged over 15 years who work in the agricultural sector (crops, horticulture, plantations, and livestock) are 40.68 and 59.32 respectively out of a total of 656,054,066 workers. Women farmers have the advantage of being more tenacious and meticulous. Female farmers are not only actively engaged in agricultural cultivation activities but also play a crucial role in determining the value of their products in the market. They actively participate in price negotiations, have the capacity to withhold products if market offers are deemed inadequate, and consider better payment options to manage their agricultural yields (Sipeyiye & Muyambo, 2021). In general, female farmers engage in activities such as planting, weeding, fertilizing and pesticide application, harvesting and threshing of crops, as well as post-harvest processes (Hove & Gweme, 2018).

Efforts are needed to maintain and increase corn productivity to meet the corn consumption and achieve an 80% contribution at the national level. Improving corn productivity should not only focus on input factors but can also be done by managing various forms of capital, including assets, finances, physical, and social (Kuang et al., 2020), where increasing productivity is followed by increasing income and quality of life for farmers. This is reinforced by Diener et al. (2015) who states that in addition to economic aspects, aspects of social relations and the natural environment are important indicators in the quality of human life. Through social capital, farmers can develop a heightened sense of empathy, kinship, collaboration, cooperation, and leadership, thereby facilitating a more efficient enhancement of productivity (Moghfeli et al., 2023). Social capital can indeed have a real impact on the development of agricultural productivity, such as farmers' decisions in choosing agricultural technology and improving the relationship between farmers and the government, based on social norms (Cofré-Bravo et al., 2019; Hunecke et al., 2017; Ogunleye et al., 2020).

Other facts state that social capital can be observed through the roles of bonding, bridging, and linking, where social capital can bridge and connect transactions with government policies (Nugroho et al., 2022). Another study investigates the influence of social capital on farmers' decisions to adopt environmentally friendly control technologies for rural environmental governance and the attainment of sustainable agricultural development in the Province of Shandong (Ren et al., 2022). Most research only examines the efficiency and effectiveness of the use of production inputs such as land area, seeds, fertilizers, pesticide, facilities and infrastructure (Khanal et al., 2018; Okello et al., 2019; Priyanto et al., 2022). However, to the best of our knowledge, studies pertaining to the influence of social capital on agricultural productivity remain limited. Therefore, this research addresses this gap by employing bonding, bridging, and linking as indicators of social capital, where bonding is social capital within one village, bridging is social capital between villages, while linking is between farmers and the local government (Putnam, 2000). Furthermore, we employ determinants such as education (Paltasingh & Goyari, 2018), which can serve as a measure of trust (Tepnadze et al., 2022), age (Guo et al., 2015), farmers experience (Aldosari et al., 2019), and the number of sales to understand the farmers' motivation in increasing productivity (Prastowo, 2023). The aim of this study is to determine the influence of women farmers' social capital on increasing corn productivity in the Bragung Village, Guluk-Guluk District, Sumenep Regency.

## 2. Theoretical Underpinning

### 2.1. Social Capital

Social capital is an individual's capital that can be in the form of behavior such as trust, cooperation, norms, and social networks collectively achieving goals (Putnam, 2000). According to Ermawati et al. (2021), the sustainability of Gapoktan in Wonogiri Regency can be influenced by social capital, namely norms and trust. About 91.9% of the sustainability of Gapoktan is influenced by social capital and has a

significant effect, where improving social capital will positively affect Gapoktan. Through social capital, it is expected to have a positive impact on the economic welfare of the community through community empowerment. Countries with high social capital tend to be more efficient and effective in improving the welfare of the people, and vice versa. Other research also states that, in increasing productivity, attention must be paid to an adequate workforce. The greater number of workers will make every process carried out easier. Therefore, we hypothesize that the presence of social capital support can enhance productivity, both in agricultural and non-agricultural sectors.

Social capital is divided into several parts: (1) Bonding Social Capital is a type of social capital that can unite individuals in a group through norms, value systems, customs, and traditions. This social bonding develops people with similar backgrounds and interests, such as family members, fellow farmers in a farmer group, and neighbors in a village; (2) Bridging Social Capital is social capital that can bridge group members in achieving the same goals by describing cross-cutting relationships, such as culture, race, class, religion, or those with different identities. Examples of Bridging Social Capital are one village with another village, and one farmer group with another farmer group; (3) Linking Social Capital or linking social capital is social capital that reaches different people with different situations by showing the existence of relationships between various levels such as status, social power, and roles in the community group. Linking social capital shows the form of community strength in the trust and obedience of members to the prevailing norms in a community, such as farmers who comply with government regulations (Mulford, 2010; Naranjo-Zolotov et al., 2022; Nugroho et al., 2022).

According to Hwang & Stewart (2017), enhancing tourism development in two rural communities in South Korea necessitates requires investment social capital through the enhancement and expansion of networks and trust. Network is the existence of relationships, connections, or ties between one individual and another or between individuals and groups. A community with a close social network will strengthen cooperation among its members. An essential part of the concept of social capital is understanding the network that allows someone to access resources and collaborate in achieving the same goals. Forms of social networks can be seen from group members or their administrators. The existence of this cooperative relationship creates a good cooperative relationship, open interactions, and mutual interdependence. One key to success in building social capital lies in a group's ability to network socially (Lin, 2017). Meanwhile, trust is a belief built on social relationships, where that trust has the same expectation. Trust is also an essential element in social capital because trust is the adhesive for the longevity of cooperation in a community group. Building trust in society is not easy; it requires good strategies and ways of socializing.

## 2.2. Productivity

Production is the effort or method of using inputs to efficiently and effectively generate output. On the other hand, productivity can be defined as the ratio between output and input. Productivity is directly related to technical factors such as the utilization of resources and human factors. According to Brandt et al. (2017), if productivity is high, then more input factors are used. One of the input factors used is capital, including physical capital, human capital, and natural resources. Physical capital plays a more crucial role compared to human capital. This is because physical capital, such as land and technological advancements, can serve as a managed savings account by maintaining balance to achieve high productivity. The increase in productivity is also caused by the consideration to meet needs or achieve self-sufficiency, which is related to farmers' motivation to increase productivity. The high level of productivity is linked to farmers' orientation towards production outcomes in meeting their needs. This is also stated by Prastowo (2023), where the higher the motivation, the higher the productivity. The multitude of needs to be fulfilled causes farmers to prefer selling their production. Meanwhile, the study by Chegere (2018) states that farmers' motivation in post-harvest is selling to gain profits. Therefore, efforts are needed to increase productivity to achieve maximum profits through the sale of harvested products.

## 2.3. Female Farmer

Women in agriculture are those actively involved in farming activities. The Women Farmers Group (WFG) serves as an organization or institution for women engaged in agricultural activities. Generally, it is expected for men to be the primary breadwinners. However, it should be acknowledged that women are equally capable of performing tasks traditionally associated with men, such as farming. In farming households, women significantly influence decision-making, even though the ultimate decision may be made by the husband. Another manifestation of the role of women in agriculture is evident in the higher

participation of women in agricultural extension compared to men. The enhancement of women's participation in agriculture contributes positively to increasing productivity, ultimately leading to the alleviation of hunger and poverty within the community (Matthew et al., 2022). The significant role of female farmers is evidenced by a study conducted in Rajasthan, wherein they engage in various agricultural activities, including land preparation, suitable planting, maintenance, harvesting, and marketing (Chayal & Dhaka, 2016). While, according to Pérez et al. (2014), female farmers demonstrate a high level of solidarity, providing them easy access to discussions and facilitating problem-solving in agricultural issues.

## 3. Research Methods

This research was conducted in Bragung Village, Guluk-Guluk Sub-district, Sumenep Regency, Madura, which was purposively chosen. The location was selected based on the consideration that the area had a significantly larger corn production compared to other villages in Guluk-Guluk Sub-district. The research took place from September to December 2023.

The sampling method employed in this research is simple random sampling, which is a method where the samples are randomly chosen from the selected population (Greene, 2012). The total population for this study comprises 420 female farmers, while the sample size is 71 female farmers determined through Slovin's calculation with a 10% margin of error. Sample selection is based on criteria considering female farmers engaged in corn production within the last year. The roles of female farmers, who are respondents in this research, in corn farming activities include seedling, planting, weeding, maintenance, harvesting, and marketing. The multitude of tasks performed by female farmers is facilitated by women farmer groups that serve as a platform for discussions related to corn farming.

The data collection method employed in this research involved primary data such as productivity, bonding, bridging, linking, age, education, experience, and sales quantity gathered through interviews with questionnaire completion. The data analysis utilized multiple linear regression analysis. Ordinary least squares analysis (OLS), it is possible to identify the social capital factors influencing corn productivity. IBM Statistical SPSS was used for this analysis, following the equation 1:

$$Y = a + b_1\text{Bonding} + b_2\text{Bridging} + b_3\text{Linking} + b_4\text{Age} + b_5\text{Education} + b_6\text{Experience} + b_7\text{Sales} + e \quad (1)$$

where Y is corn productivity, a is the regression model constant, b1, b2, b3, b4, b5, b6, b7 is the regression coefficient, and e is the error constant.

The indicators utilized in the bonding variable include harmony and trust within the family, among fellow farmers within the same village, and with non-farming individuals within the village. Meanwhile, the bridging variable has indicators related to harmony and trust with farmers from other villages. The indicators for the linking variable include trust in the police, judiciary, city government, and agricultural research institutions (Zeleke et al., 2023). Additionally, all these indicators have undergone reliability and validity tests to ensure accurate and consistent results.

## 4. Results and Discussion

### 4.1. Farmer Characteristics

The corn productivity in Bragung Village, Guluk-Guluk Subdistrict, Sumenep Regency, averages 7,249 kg/ha with a minimum of 2,870.35 kg/ha. According to previous research, social capital, age of farmers, education, and experience have a positive influence on increasing corn production. In this study, the average social capital sub-bonding score was 19.08 using a total Likert scale. This value is close to the maximum bonding score of 20, indicating that social capital bonding in Bragung Village is considered high. Meanwhile, the average bridging score is 8.42 with a maximum value of 10, suggesting that the bridging value in Bragung Village is high. Additionally, the linking value falls into the high category, with a score of 24.12, approaching the maximum value of 25. The average age of female farmers in Bragung Village is 45 years, with the youngest being 30 years old. According to Göbel & Zwick (2012), there are two hypotheses regarding the influence of age on productivity. Firstly, older workers will enhance productivity due to increased experience, greater loyalty, heightened conscientiousness, and a strong work ethic. Secondly, younger workers will enhance productivity owing to technical knowledge, greater creativity, innovativeness, flexibility, openness to new ideas, and stronger physical resilience. Furthermore, workers in the productive age group are expected to be more efficient in their jobs and income-generating activities. The findings of this research indicate that the average duration of education is 7 years, equivalent to

elementary school level, with farming experience ranging from 10 to 50 years. Higher education is believed to enhance efficiency in farming activities. The selling quantity averages 90% of the production yield. The characteristics of farmers' profiles can be observed in Table 1.

**Table 1.** Description of the variables used in the research

| Variable | Variable Definition | Average | Std. dev. |
|---|---|---|---|
| Productivity | Corn productivity (Kg/Ha) | 7.25 | 1,984.16 |
| Bonding | Farmers' trust in a village (total likert) | 19.08 | 1.13 |
| Bridging | Farmers' trust in other villages (total likert) | 8.42 | 0.68 |
| Linking | Farmers' trust in the government (total likert) | 24.12 | 3.53 |
| Age | Farmer's age when interviewed (years) | 45.97 | 10.21 |
| Education | Years of farmer education (years) | 7.78 | 3.93 |
| Experience | Length of experience of farmers in farming (years) | 29.43 | 10.21 |
| Sales | Amount of production sold (percent) | 90.32 | 13.70 |

### 4.2. Social Capital

Based on the findings of this research, it is observed that respondents feel very harmonious with the people or neighbors in the same village. In sequence, the respondents show a stronger inclination towards "strongly agree" for indicators 2 and 3. However, for the fourth indicator, the proportions of "agree" and "strongly agree" are almost equal. The high selection of "strongly agree" in this bonding sub-indicator is based on the strong community trust. This is also supported by the traditional houses in Bragung Village, known as "taneyan lanjhang" in Madura. Taneyan lanjhang is a traditional house symbolizing strong kinship, close proximity, and still within the family scope (Setiani et al., 2022). As for the bridging variable, it employs two indicators, where respondents prefer the "agree" scale for the indicator of harmony with people from other villages, which is higher than the indicator of harmony with other village farmers. Field facts indicate that the female farmers in Bragung Village do not mind participating in gatherings held in other villages. Meanwhile, bridging social capital tends to be overlooked as priorities focus on internal network interactions or ties when issues arise. This aligns with our findings indicating that bonding scores are higher compared to bridging social capital, namely 4.77 and 4.21 respectively (calculated by dividing the average scores of bonding and bridging by the total number of indicators). This is also consistent with Rusmawati et al. (2023), which identified higher bonding scores compared to bridging. The first indicator of the linking variable, most respondents' express uncertainty in trusting city police. The city police used in this study include Bhabinkamtibmas (Community Security and Order Officer), Babinsa (Village Development Officer), and Policy Maker. The farmers' expectation from the government is to reduce input prices, as indicated by the high agreement among female farmers in the fourth indicator. Many governments tend to overlook the welfare of citizens, especially in the agricultural sector. This is supported by other research indicating that regional governments and the central government have fluctuating relationships, causing differences (Kostka & Nahm, 2017).

**Table 2.** Social Capital Indicators (%)

| | Indicator | SD | D | R | A | SA |
|---|---|---|---|---|---|---|
| Bonding | You get along well with the people in this Village | 0 | 0 | 0 | 26.7 | 73.3 |
| | You get along well with the family | 0 | 0 | 0 | 11.3 | 88.7 |
| | You feel safe in this Village | 0 | 0 | 0 | 15.5 | 84.5 |
| | You are a trustworthy person | 0 | 0 | 0 | 40.8 | 59.2 |
| Bridging | You get along well with people from other Villages | 0 | 0 | 0 | 84.5 | 15.5 |
| | You get along well with farmers from other Villages | 0 | 0 | 0 | 73.2 | 26.8 |
| Linking | You trust the city police | 0 | 2.8 | 57.8 | 36.6 | 2.8 |
| | People become poor because they are lazy and have no will | 12.7 | 4.2 | 4.2 | 28.2 | 50.7 |
| | People become poor because they are not given the same opportunities as other people | 12.7 | 7 | 8.5 | 25.3 | 46.5 |
| | Local governments should focus on reducing input prices | 0 | 0 | 0 | 16.9 | 83.1 |
| | Local governments treat everyone equally | 0 | 2.8 | 5.6 | 28.2 | 63.4 |

Note: SD (Strongly Disagree); D (Disagree); R (Doubtful); A (Agree); SA (Strongly Agree)

### 4.3. The Influence of Female Farmers' Social Capital on Corn Productivity

The influence of female farmers' social capital on corn productivity in Bragung Village, Guluk-Guluk District was tested using OLS and classical assumption tests.

### 4.3.1. Classical assumption tests

The classical assumption test aims to ensure that the data used meets the requirements for BLUE (Best Linear Unbiased Estimator), which is conducted through tests for normality, multicollinearity, heteroskedasticity, and autocorrelation. The normality test in this study is indicated by the One-Sample Kolmogorov-Smirnov Test, resulting in a p-value of $0.200 > 0.05$. This can be interpreted as the data used in this study being normally distributed. Meanwhile, the multicollinearity test can be observed through the Variance Inflation Factor (VIF) values for each variable, where all variables used in this study are free from multicollinearity (VIF < 10). The heteroskedasticity test in this study is conducted through Glejser analysis, producing a significant heteroskedasticity test value greater than 0.05. Therefore, it can be concluded that this research is believed to be free from heteroskedasticity, or referred to as homoskedasticity. As for the autocorrelation test, it can be observed through the Durbin Watson value, which is 2.155. This implies that the data in this study passes the autocorrelation test, as the Durbin Watson value falls between the bounds of DU (1.8366) and 4-DU (2.1634).

### 4.3.2. Model estimation using ordinary least squares (OLS)

Regression analysis includes tests such as R-Square, F-test or simultaneous test, and T-test or partial test. The R-Square test in this research is observed through the Adjusted R-Square value, which is 0.207, meaning that the variables of bonding, bridging, linking, age, education, experience, and sales can collectively influence the dependent variable, corn productivity in the Bragung Village, Guluk-Guluk Sub-District, by 20.7%. The F-test in this study is assessed through the F-value, which is 3.609, with an F-table value of 2.16, indicating that the F-value is greater than the F-table value, and thus the hypothesis is accepted. Additionally, in Table 3 of the Anova, a significant value of 0.002 is obtained, which is less than 0.05. It can be concluded that the independent variables, namely bonding, bridging, linking, age, education, experience, and sales quantity, collectively have a significant effect on the dependent variable, corn productivity. The T-test results aim to determine the influence of each variable used. Based on the T-test results, the regression model presented in equation 2:

$$Y = -1073,546 + 270,605 \text{ Bonding} - 286,793 \text{ Bridging} + 17,715 \text{ Linking} + 503,657 \text{ Age} + 717,264 \text{ Education} + 934,251 \text{ Experience} + 15,497 \text{ Sales} + e \tag{2}$$

The significance value for the bonding variable is 0.025, which is less than 0.05. It can be interpreted that the bonding variable has a significant influence on the increase in corn productivity in Bragung Village, Guluk-Guluk Subdistrict. This may occur because farmers in Guluk-Guluk Village have strong relationships with family members, neighbors within the village, or fellow farmers in the village. This is supported by the fact that the corn farming process is usually assisted by family members. Other relationships are also evidenced by discussions on fertilizer and seed usage in every women farmer group. Additionally, women farmers help each other, especially when facing issues such as pest infestations; in such cases, relatives or nearest neighbors provide assistance and suggest remedies. This statement aligns with the research conducted by Moghfeli et al. (2023), stating that harmony among farmers from different households can enhance farming efforts. Trust will make farmers harmonious and willing to help each other, thereby collectively influencing productivity.

The bridging variable has a significance value (sig) greater than 0.05, specifically 0.116. Therefore, the bridging variable does not affect the increase in corn productivity in Bragung Village, Guluk-Guluk Subdistrict. Women farmers in Bragung Village feel harmonious with people and farmers from other villages, and they do not hesitate to assist other villages. However, the lack of road access to other villages outside Bragung Village, where the distance between houses is quite far, contributes to this lack of influence. This research aligns to Satria (2006), which suggests that the bridging variable has weaknesses that can lead to conflicts due to inadequate communication. Thus, the strong relationship among farmers in Bragung Village with other villages does not influence the increase in corn productivity.

The significance value (sig) for the linking variable is 0.813, which is greater than 0.05, indicating that it does not have an effect on the corn productivity of Bragung Village in Guluk-Guluk Subdistrict. The lack of linking influence on productivity may be due to the limited activity of government institutions in

agricultural efforts, such as the agricultural department (Craig et al., 2023). Women farmers have less trust in the government, as they believe that farmers base their corn farming on ancestral knowledge passed down through families. Additionally, women farmers perceive that the contribution of farmer groups in the farming process is more significant than that of the agricultural department. The relationship between farmers and farmer groups in Bragung Village is strong, as evidenced by monthly group meetings to discuss cultivation, marketing, and post-harvest activities. However, it is possible for the Agricultural Department to contribute to corn farming if the farmer group requires assistance. This research result also aligns to (Satria, 2006), indicating that farmer groups still do not trust assistance from NGOs, such as capital and technology. This lack of trust between farmers and the local government results in linking having no influence on the increase in corn productivity in Bragung Village.

Meanwhile, the age variable has a significance value greater than 0.05, namely 0.282. It can be concluded that the age variable does not have a significant effect on corn productivity. The lack of influence from age is attributed to female farmers who are older, tending to engage in corn farming only to meet their basic needs. However, this research contradicts to Guo et al. (2015), who states that age has a dominant influence on productivity in both farming and non-farming activities.

The education variable in this study has a significance value of 0.002, which is smaller than 0.05. Therefore, the education variable has a significant effect on increasing corn productivity. The education level of female farmers in Bragung Village consists of 9.9% with no formal education, 45.1% completed elementary school, 18.3% completed junior high school, 21.1% completed high school, and the remaining have a bachelor's degree. The 32 female farmers with only elementary school education or equivalent are due to economic constraints, forcing them to assist their parents in farming. This also makes corn farming in Bragung Village a traditional practice passed down through generations in families. These findings align by Paltasingh & Goyari (2018) asserting that education has a positive influence on farmers by enhancing their skills in collecting, analyzing, and applying information within the agricultural context. These skills cultivate an environment conducive to the adoption of contemporary technologies, thereby resulting in increased productivity.

The experience variable has a significant value of 0.008, which is less than 0.05, indicating that experience has a significant effect on corn productivity in Bragung Village, Guluk-Guluk Sub-district. Many female farmers in Bragung Village engage in traditional farming practices and share similar cultivation methods. Most female farmers in Bragung Village start farming at a young age, with an average minimum age of 8-10 years old. This research is consistent to Aldosari et al. (2019), which states that experience has a significant impact on agricultural productivity. It is proven that the more experience farmers have, the higher their productivity by integrating advanced and improved technologies into their agricultural practices. Farmers with extensive experience will farm more effectively and efficiently. The variable of sales quantity produces a significance value of 0.329, which is greater than 0.05. Therefore, it is believed that the sales quantity variable does not have an influence on corn productivity in Bragung Village, Guluk-Guluk Sub-district. The people of Bragung Village sell corn production only to meet their daily needs.

**Table 3.** Ordinary least squares estimation

|  | Coefficient | T-value | Sig |
|---|---|---|---|
| (Constant) | -1,073.546 | -0.376 | 0.706 |
| Bonding | 270.605 | 2.297 | 0.025** |
| Bridging | -286.793 | -1.594 | 0.116 |
| Linking | 17.715 | 0.238 | 0.813 |
| Age | 503.657 | 1.085 | 0.282 |
| Education | 717.264 | 3.234 | 0.002** |
| Experience | 934.251 | 2.760 | 0.008** |
| Sales | 15.497 | 0.983 | 0.329 |
| R Square | 0.286 |  |  |
| Adjusted R Square | 0.207 |  |  |
| F-value | 3.609 |  |  |
| F-table | 2.160 |  |  |
| Sig | 0.002*** |  |  |

Note: *significant at 0.1; ** significant at 0.05; ***significant at 0.01

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Our findings suggest that only the bonding social capital indicator has a significant influence. This finding is sufficient to assert the role of social capital or social networks in in enhancing corn productivity. This aligns with previous studies indicating that farmers with social networks and trust achieve higher productivity due to better access to productive resources, reduce production costs (Taylor & Featherstone, 2018), enhance knowledge, and increase the likelihood of adopting new agricultural technologies through information exchange among farmers (Cofré-Bravo et al., 2019). Furthermore, social capital facilitates farmers in securing agricultural labor more easily, thereby improving corn productivity. This is particularly important given the declining supply of agricultural labor due to urban migration (Kehinde et al., 2021).

## 5. Conclusion

The research findings indicate that 20.7% of the independent variables have an influence on corn productivity. Collectively, the independent variables significantly impact corn productivity in the Bragung Village. Meanwhile, on a partial basis, bonding, education, and experience variables have positive and significant influences. The results of this study can be utilized by relevant departments to enhance corn productivity in the Guluk-Guluk Sub-district by emphasizing social capital bonding, such as strengthening family and neighborly relationships within a village. Additionally, education and experience are crucial factors to consider for improving corn productivity.

The policy implications of this study are directed toward policymakers, farmers, and further researchers. Our findings reveal that social bonding significantly influences corn productivity. Therefore, we recommend that policymakers facilitate training and farmer group activities to strengthen internal social networks, particularly among women. This approach will enhance farmers' knowledge and adoption of new technologies, thereby improving productivity. Additionally, the government should integrate social capital into agricultural programs, such as providing incentives for groups with high levels of cooperation. For farmers, leveraging digital technology to share information among them. The limitation of this study lies in indicating a small effect. Thus, further research using additional variables is necessary to generate a more comprehensive model.

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