

Trust as Social Capital in Farming Business Activities in Supporting Success Rice Productivity in Wonggeduku District, Konawe Regency

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This study employs a qualitative approach utilizing a case study methodology to investigate the role of trust as a form of social capital in enhancing rice productivity within Wonggeduku District, Konawe Regency. The research process involved the collection of data through a combination of in-depth interviews, field observations, and document analysis to ensure a comprehensive understanding of the subject matter. The findings from this study reveal several critical insights. Firstly, the presence of trust among farmers fosters increased collaboration, solidarity, and the sharing of knowledge and resources. This collective effort leads to more effective and sustainable agricultural practices. When farmers trust one another, they are more willing to engage in cooperative ventures, share best practices, and support each other's efforts, which collectively enhances their productivity and resilience. Secondly, the study highlights the importance of trust in local agricultural institutions. When farmers have confidence in these institutions, they are more likely to adopt new technologies and sustainable farming practices. This trust in institutional support facilitates the dissemination of innovations and best practices, ultimately contributing to improved agricultural outcomes and long-term sustainability. Furthermore, trust at the community level plays a pivotal role in driving significant changes needed to improve crop yields and overall community well-being. A cohesive community, built on mutual trust, can effectively mobilize resources, implement collective strategies, and address challenges collaboratively. This communal trust enables the community to undertake and sustain initiatives that lead to enhanced agricultural productivity and development. Overall, this research underscores the vital role of trust as a crucial form of social capital in achieving agricultural success and fostering sustainable rural development. The study provides valuable insights into how trust can be leveraged to enhance collaboration, technology adoption, and community engagement, ultimately contributing to improved agricultural performance and community prosperity.

Keywords: Trust, social capital, farming business activities, supporting success, rice productivity.

INTRODUCTION

Productivity in farming has a vital role in improving the welfare of rural communities. Strawberry cultivation in urban production systems requires the exchange of knowledge with commercial farmers to improve farmer productivity and community welfare through high-quality yields and food independence. The application of IoT technology in monitoring the temperature and ammonia levels of chicken coops in the Poultry Jaya Farmers Group is expected to increase farming productivity and community welfare. The study highlights the importance of supporting smallholders in cocoa, oil palm and cassava production to improve farming productivity and community welfare in Southern Nigeria (Amuda and Alabdulrahman, 2024). This study shows that

social capital has a significant effect of 72.4% on the welfare of farmers in Gapoktan Agro Mandiri, Ponorogo, by increasing the productivity of farming businesses and community welfare (Arum *et al.*, 2023). The active role of women farmers in white copra farming in Lameo-Meong Village, West Poleang District, significantly increases agricultural productivity and economic welfare of the local community. High productivity in farming can reduce social disparities between successful and less successful farmers. Increased productivity through the development of the food processing sector in Benin increases raw material prices and low labor wages, thereby reducing social disparities and poverty among farmers. The study examines the influence of social, structural, and Circular Economy factors on the productivity and social disparities of farmers in India, finding

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that Circular Economy strategies significantly improve agricultural efficiency (Balaji *et al.*, 2023). High-investment coffee production systems with high productivity are more likely to achieve economic success and positive returns, while farmers with limited investment are better off using high-shadow systems for positive outcomes. Grassland reseeded shows that more diverse seed mix designs are needed to address biodiversity loss, increase productivity, and farmers' success in the face of climate change. The study shows that the knowledge, attitudes, and practices of livestock farmers in Southwestern Ethiopia towards animal vaccines need to be improved to achieve high productivity and farmer success through veterinary education and services.

Productive farming can reduce economic inequality in rural communities and strengthen social ties between citizens. The Covid-19 pandemic and natural disasters threaten the productive capacity of poor households, but cash assistance and irrigated agriculture in the Eastern Cape reduce economic inequality by increasing food security and agricultural productivity. Productive farming and social integration are important to sustain HNV farmland in Europe through a strategic approach of innovation brokers that engage local actors and integrate ecological and socio-cultural values (Bernard *et al.*, 2023). This study analyzes the decision-making process of family farmers in Mossoró – RN, linking participation in associations and cooperatives to productive farming and social integration in family farming. Smart Agriculture (SA) evolved from Precision Agriculture (PF) and is similar to Industry 4.0, emphasizing integrated information systems for productive farming decisions and social integration through four Macrod domains of Key Interest. The Rwandan government encourages agricultural intensification for economic growth and food security, but this strategy often ignores the diversity of productive farming and the social integration of dynamic smallholder farmers.

Increased productivity can also affect patterns of social interaction in rural areas, such as increasing collaboration between farmers in terms of agricultural technology and sustainable natural resource management practices. The Plantwise program in Kenya increases productivity and collaboration among farmers by establishing plant clinics, increasing knowledge, and changing the government's approach to crop protection to support smallholders (Bonilla *et al.*, 2024). The study shows that the business practices of livestock input providers have an impact on livestock productivity and the importance of collaboration between entrepreneurs and smallholders to increase the use of livestock inputs in Tanga and Kilimanjaro. The integration of AI in precision agriculture improves productivity and collaboration between farmers through crop monitoring, resource management, decision support systems, and automation, as well as addressing global sustainability and food safety challenges (Adewusi *et al.*, 2024). With a population of 1.4 billion, India faces major challenges in the

agricultural sector that require modern techniques and advanced technology to improve productivity and sustainable management of natural resources. To address food security issues, Pakistan's agricultural sector needs to increase productivity and manage natural resources sustainably through modern irrigation techniques, water management, and efficient marketing systems (Batool and Nazir, 2023). Productivity in farming has the potential to change social and economic dynamics in rural communities towards a more sustainable and inclusive direction. Agricultural development strategies that take into account soil productivity and socio-economic dynamics are important to align agricultural production with biodiversity conservation (Daum *et al.*, 2023). The productivity of oil palm farmers in Sei Mangkei, North Sumatra, shows extensive urbanization without land expenditure, utilizing agricultural contracts to improve socio-economic welfare. The study, conducted in the northeastern parts of India, namely Assam, Meghalaya, and Tripura, focused on milk productivity and socioeconomic status of cattle farmers for 300 pure, randomly selected farm households. The use of data from the Sentinel-2 satellite in conjunction with topographic and climatic variables can improve wheat yield estimates in arid and semi-arid regions, support agricultural productivity and reduce socio-economic pressures. The growth of shrimp farming in Brazil since the early 2000s, supported by public investment and environmental deregulation, has generated new socio-economic impacts as well as productivity problems in the sector. Decreased productivity can lead to a decrease in income for farmers, which in turn worsens the poverty level in rural areas. The change from agricultural land to non-agricultural land around the city has resulted in a decrease in productivity and farmers' income, especially in fruit commodities and plantations in the Cirasea watershed (Husodo *et al.*, 2021). The study illustrates the impact of the COVID-19 pandemic on the lives of agroforestry farmers in Tasikmalaya, showing a decline in productivity and income, as well as the importance of adopting sustainable farming practices for the well-being of the community. The study analyzed the influence of contract farming on income, sustainability, and community well-being in Vietnam, finding that in the medium and long term, contract farming increased the adoption of sustainable farming practices and community well-being (Hoang, 2021). The results show large variation among agricultural yields, suggesting that there is room for simultaneous increases in various dimensions, as well as suggesting that increasing productivity does not appear to be a necessity in addressing declining productivity and farmers' incomes. A study in Masaba South Sub-County, Kisii County, Kenya shows that smallholder perceptions of climate change are driving the adoption of sustainable farming practices, which has a positive impact on community well-being. Government support for Aus rice production boosts productivity and reduces poverty in Bangladesh, even though



per capita calorie intake is still below the national average. Low productivity can also threaten food security, as food supplies are insufficient to meet local and national needs. The COVID-19 crisis highlights low productivity and instability of food systems, especially for smallholders, highlighting the importance of agrarian policies that support resilience and crisis adaptation. Nutrient pulses from the decomposition of goldfish carcasses provide high ecosystem productivity, in contrast to low productivity in systems with disrupted nutrient subsidies. The COVID-19 pandemic disrupted the global food system with the impact of low productivity and limited market access, driving the need for a sustainable and resilient food system. The lack of unprocessed big data is a major challenge in the diagnosis of plant diseases, which can reduce food production and global food security (Joseph *et al.*, 2024). Limited food availability often drives the consumption of unhealthy fast food options among young adults, so 3D printing technology can be used to provide healthy and nutritious food options according to individual needs. Low productivity in farming can exacerbate social disparities among rural populations. Adopting sustainable farming practices and community well-being can improve the quality of work in the retail sector by strengthening labour regulations, minimum wages, and collective bargaining, as in Europe (Hanley, 2019). Since the 1960s, the adoption of CGIAR's sustainable agriculture technology in Asia, Africa, and Latin America has improved the productivity and well-being of communities with \$47 billion in annual economic benefits through 2020 (Fuglie and Echeverria, 2024). Bibliometric analyses show that although research productivity in the Middle East and Arab countries is increasing, significant disparities in scientific output and their impact reflect challenges related to low productivity and weak collaboration (Dardas *et al.*, 2023). Reduction of working hours in Russia can lead to a decrease in economic potential and income due to disparities, low complexity, social work and productivity. Farming on steep slopes is important for smallholder food security, but social disparities and low productivity in low-income countries point to inequities that need more attention. Farmers who are unable to increase their productivity may experience greater economic pressure, which can affect their social and psychological well-being and disrupt social bonds in those communities. Increasing agricultural productivity through CGIAR technology has significantly reduced poverty, especially for farmers in low-income countries (Fuglie and Echeverria, 2024). Ghana's high rice variety technology dissemination program has reduced poverty and rice imports, but the low adoption rate is linked to ineffective communication methods, particularly among low-productivity farmers. Socio-economic factors, households, and agricultural characteristics influence the choice of sustainable land management practices (SLMPs), which have the potential to increase farmers' productivity and reduce poverty in the region. Farmers with low productivity

and weak social integration in Sri Lanka's small-scale tea sector require the transformation of farmer organizations to become strong socio-economic entities. These studies explore the borrowing policies of the formal, informal, and semi-formal financial sectors in Vietnam, linking them to the challenges of social integration and low productivity among farmers.

Low productivity can also reduce collaboration and solidarity between rural residents in solving common problems and managing resources sustainably. Financial constraints on companies reduce the ability to increase productivity through innovation, and lead to low ability to manage resources. The causes of economic and agricultural policy failures in Albania, especially related to low productivity and weak cooperation in the agricultural sector. Russia's economy's ability to generate profits is limited by low productivity in the industrial, service, and agricultural sectors as well as weak cooperation, which has the potential to deepen the global recession. Many studies have shown that the level of ethnic diversity is associated with low productivity and weak cooperation in the provision of public goods, supported by strategy selection mechanisms in homogeneous communities (Habyarimana *et al.*, 2007). Multi-model research shows that climate change has the potential to reduce both low productivity and weak cooperation in various regions, especially in tropical countries (Dasgupta *et al.*, 2021).

High trust, collaboration and solidarity between farmers will be easier to establish, allowing them to share knowledge and resources. The relationship between organizational trust and informal knowledge sharing (workplace gossip) is a rarely investigated research theme, suggesting that high trust favors beneficial knowledge transfer, while gossip with false information can damage organizational performance (Bencsik and Juhasz, 2020). The effect of trust on knowledge sharing at Telkom Corporate University Center Bandung, where high trust affects knowledge sharing behavior among employee. This study found that high trust and collaboration had a significant effect on knowledge sharing behavior in service-oriented NGOs in Klang Valley, Malaysia (Noor *et al.*, 2016). This study shows that saffron-producing villages have a higher level of social solidarity compared to villages that grow other crops, as the collaboration required in saffron production strengthens social cohesion. New digital technologies in New Zealand's agriculture bring challenges and opportunities that require collaboration and solidarity of farmers to optimise their sustainability and adaptation. This study explains that olebolo as an oral literary expression of Tidore farmers and peasant ritual ceremonies in Tidore show collaboration in agricultural practices as well as strong solidarity between them (Wahid *et al.*, 2022).

Encourage the adoption of sustainable farming practices that improve crop yields and community well-being. This study aims to determine the intensity of adoption of Sustainable Agricultural Practices and its determinants, by finding that the



adoption intensity reaches 70% and the determinants of adoption include education level, household size, land area, ICT use, access to market information, extension visits, and access to credit. Modifications of agricultural practices that Pakistani farmers can adopt to reduce agricultural yield losses due to climate change, with a focus on the adoption of sustainable agricultural practices and increased crop yields (Khan *et al.*, 2023). The adoption of sustainable agricultural practices and the integration of agricultural systems such as crop cultivation, livestock, fisheries, and renewable energy are important for the well-being of farming communities in India, especially in Bihar (Chaubey *et al.*, 2018). The implementation of sustainable agricultural practices and community well-being in Africa needs to be improved through the adoption of animal welfare standards that are appropriate to local conditions to improve product quality and food safety (Njisane *et al.*, 2020). The adoption of digital technologies in sustainable agriculture in New Zealand's rural communities can improve efficiency, well-being and resilience, while meeting consumer demands for ethical and quality food production.

This conceptual framework emphasizes the importance of trust as social capital in three contexts: individual, institutional, and community. High trust between farmers facilitates collaboration and solidarity, allowing for critical sharing of knowledge and resources. In an institutional context, training and technical support have become more effective and easy to implement. Community trust supports the adoption of sustainable farming practices, which leads to improved crop yields and community well-being. Thus, this trust contributes significantly to the productivity of paddy fields and the overall welfare of farmers. The hypothesis is that high trust between farmers in the context of individuals, institutions, and communities functions as social capital that strengthens collaboration, knowledge sharing, and the adoption of sustainable agricultural practices, thereby increasing rice productivity and community welfare. This solidarity allows for the reception and implementation of training and technical support more effectively.

MATERIALS AND METHODS

This study uses a qualitative approach with a case study method to explore the role of trust as social capital in supporting the success of rice productivity in rural areas. Data were collected through in-depth interviews with farmers, field observations, and analysis of related documents. Trust between farmers is analyzed as the main factor influencing collaboration, solidarity, and sharing of knowledge and resources. Training and technical support from local agricultural institutions are also examined to see how trust affects its adoption and implementation. The study focuses on the impact of trust in driving the adoption of sustainable farming practices that can improve crop yields and

community well-being. Data analysis was carried out by the triangulation method to ensure the validity and reliability of the findings. The results of the study are expected to provide insight into the importance of trust as social capital to increase rice productivity and the welfare of farmers in rural areas.

RESULTS AND DISCUSSION

Trust in Individual Contexts: Trust in the context of individuals, in the perspective of rural sociology, refers to farmers' belief in their own and fellow farmers' abilities and integrity in carrying out agricultural practices. This trust includes an assessment of technical skills in planting, maintenance, and harvesting, as well as a reputation built through experience and consistent results. Individual trust plays a crucial role in building social networks that support, facilitate cooperation, and encourage the adoption of agricultural innovations that can improve the productivity and well-being of rural communities.

Table 1 analyses trust in the context of individuals among paddy rice farmers in Wonggeduku District, which is built through daily interaction and is based on technical, managerial, and adaptive skills. The relevance of decentralization in socio-economic system reform is achieved by highlighting technical, managerial, and adaptation interactions as the basis for territorial community development (Horoshkova *et al.*, 2022). A systematic mathematical approach in the management of agricultural logistics that is adaptive and dynamic, considering significant risks and threats, improves economic efficiency and process reliability through appropriate managerial interactions. The implicit shock tracking method is applied to the problem of time with a space-time slab approach, allowing for accurate mesh adaptation for complex shock interactions such as curved shocks and boundary-shock interactions (Naudet and Zahr, 2024). Farmers who have a good reputation and high integrity, show consistency, honesty, transparency, and care for others, gain greater trust than other farmers. Trust and reputation in a family business show the importance of reputation in building relationships with stakeholders and achieving economic and non-economic goals (Chaubey *et al.*, 2018). Corporate Social Investment in the oil and gas industry, through community collaboration and transparency, enhances the company's reputation as well as public trust, positively impacting the environment and sustainable development. Proper trust in AI is influenced by integrity, with AI explanations of potential data bias or algorithms increasing trust that are more appropriate than transparent or honest explanations. Research integrity is important for trust between researchers and the public, especially in complex international business research, with an emphasis on rigorous ethical methods and practices (Miller *et al.*, 2024). These individual beliefs strengthen collaboration between farmers, encourage knowledge sharing, and increase the adoption of



Table 1. Trust in individual contexts.

No.	Focus	Sub Focus	Category	Sub Category	Conclusion
1	Belief	Individual Context: The trust of paddy farmers in Wonggeduku District in the context of individuals is built through daily interactions based on ability/competence. farmer personal. Farmers who are known to have the ability and reputation in managing farming businesses have a high level of trust from other farmers.	Ability: The capabilities of paddy rice farmers in Wonggeduku District include technical skills, managerial skills, and adaptability. Considered: There are several farmers in Wonggeduku District who are perceived by other farmers to have a good reputation in managing farming businesses	Technical Ability: Farmers' abilities related to paddy rice farming practices are the ability to plant, maintain, and harvest Managerial Ability: The ability to implement (consistent with planning) determines the success of paddy productivity the most, compared to other managerial abilities Adaptability: The ability of farmers to adapt to changing conditions, namely: Climate change, more efficient use of Agricultural Technology Integrity: This reputation is supported by high integrity, namely consistent, honest, transparent, and willing to help fellow rice farmers	Trust as part of social capital, in the context of individuals in the rice farming community in Wonggeduku District consists of 3 abilities, namely technical ability, managerial ability, and adaptability. These three abilities have a significant contribution in building reputation and trust among farmers in Wonggeduku District There are several farmers in Wonggeduku District who have a good reputation in farming so that other farmers have a sense of trust in the farmer so that they can produce high rice productivity

Table 2. Trust in an institutional context.

No.	Focus	Sub Focus	Category	Sub Category	Conclusion
1	Belief	Institutional Context	Transparency Consistency	Transparency in financial processing Transparency in the distribution of aid/subsidies Transparency in decision-making Be consistent with meeting schedules Be consistent in the implementation of work programs Consistent in the application of internal rules	Farmers' trust in the institutional context is reflected through transparency and consistency in the farmer group.

sustainable farming practices. Farmers in Yolo County, California, expressed widespread concern over the availability of groundwater and supported individual-based policy options or incentives to address the issue, highlighting the importance of individual confidence in the adoption of sustainable farming practices (Niles and Wagner, 2019). By trusting each other, farmers are more likely to work together in implementing efficient and adaptive agricultural technologies, which ultimately increases the productivity of paddy fields in the region.

In the context of Wonggeduku, a district in Southeast Sulawesi, Indonesia, the application of social capital theory can provide valuable insights into the agricultural dynamics of the region. Wonggeduku, known for its diverse agricultural landscape including rice paddies, cocoa plantations, and vegetable farms, presents a unique setting for examining the interplay of bonding, bridging, and linking social capital. The traditional Tolaki community, which forms a significant part of the local population, likely demonstrates strong bonding

social capital through their shared cultural practices and agricultural traditions. This could be evident in communal farming activities, local farmers' associations, and the preservation of indigenous farming knowledge.

Bridging social capital in Wonggeduku might be observed in the interactions between different ethnic groups engaged in agriculture, such as the Tolaki, Bugis, and other migrant communities. These inter-group connections could facilitate the exchange of diverse farming techniques and market information, potentially leading to agricultural innovation and improved productivity. The district's proximity to Kendari, the capital of Southeast Sulawesi, may also provide opportunities for linking social capital. Farmers in Wonggeduku might leverage these vertical connections to access government agricultural programs, financial institutions, or partnerships with agribusinesses based in the city. Analyzing how these different forms of social capital manifest and interact in Wonggeduku could offer valuable insights into the resilience and adaptability of its agricultural



sector, as well as identify potential areas for intervention to enhance rural development in the region.

Trust in an Institutional Context: Trust in the institutional context refers to farmers' confidence in the integrity, transparency, and consistency of institutions involved in the agricultural sector, such as cooperatives, extension, and the government. From the perspective of rural sociology, this trust is crucial because these institutions serve as key intermediaries in the distribution of information, technology, and resources essential for agricultural sustainability. When these institutions act honestly and consistently, they build trust among farmers, which in turn increases participation and adoption of agricultural innovations. This strengthens social and economic networks in rural areas, encouraging the progress and well-being of farming communities.

Table 2 outlines trust in an institutional context as reflected through transparency and consistency within farmer groups. that traditional approaches often fail to ensure consistency, footprint, and transparency, which contributes to low project success rates (Wolf and Specker, 2024). This study investigates consumer perceptions of channel brand integration that adopts an omnichannel approach, focusing on process consistency and transparency of channel service configurations that influence consumer inclination towards alternatives (Ellahi et al., 2024). Transparency includes financial processing, distribution of aid or subsidies, and decision-making, which allows farmers to feel secure and confident in the management of resources and group decisions. Consistency includes meeting schedules, the implementation of work programs, and the implementation of internal rules that provide stability and certainty for farmers. This trust strengthens collaboration between farmers, enables effective knowledge sharing, and encourages the adoption of sustainable farming practices. With strong trust in institutions, farmers are more likely to work together and implement new technologies and methods that can improve the productivity and sustainability of their farming operations. This study aims to examine the influence of trust-based collaboration and idealistic transformational leadership on knowledge sharing, as well as to examine the impact of contingent reward-based

transactional leadership on trust-based collaboration and knowledge sharin. Collaboration with various parties, both regional, national, and international, increases the company's productivity through innovation (Audretsch and Belitski, 2024).

Trust in the Context of Society: Trust in the context of society, particularly in the perspective of rural sociology, is a collective belief built through social interaction, solidarity, and shared norms that support cooperation and cohesion in rural communities. This trust includes mutual trust between individuals, groups, and local institutions, which allows communities to work together effectively, share information and resources, and overcome common challenges. In this context, trust strengthens social networks and facilitates the adoption of innovations and sustainable agricultural practices that improve the well-being of communities.

Table 3 explains that trust in the community context, especially in Wonggeduku District, is formed through social solidarity practices such as joint management of water resources (irrigation), exchange of information and knowledge about paddy farming, and cooperation in the management of farming businesses during the planting and harvesting seasons. This descriptive survey research aims to identify the predictors of CEO social capital in agricultural, technical, and engineering consulting firms in Fars Province, Iran, which includes trust and social solidarity as key factors in company productivity (Ataei et al., 2024). These practices strengthen trust and social bonds among farmers, which in turn supports the success of paddy rice productivity. Regional differences in trust levels reflect the structure of social ties available in different regions, influencing both political and social beliefs. Individual trust plays an important role in strengthening this collaboration, as confident and reputable farmers are more likely to share knowledge and experience. This encourages the adoption of sustainable farming practices and ensures that all elements of society work together to achieve optimal yields. This study shows that negative perceptions of crisis management can replace political trust with social trust, reflecting how individual trust affects the dynamics of trust in society (Aassve et al., 2024). Individual

Table 3. Trust in the Context of Society.

No.	Focus	Sub Focus	Category	Sub Category	Conclusion
1	Belief	Community Context	Social Solidarity	Joint treatment of water sources (irrigation) Exchange of information and knowledge about farming Mutual cooperation in the management of farming business	The social solidarity of paddy rice farmers in the community in Wonggeduku District is reflected in several forms, namely: Joint management of water resources, exchange of information and knowledge about paddy farming, gototng royong in the management of farming (planting and harvesting season). These social solidarity practices strengthen trust and social bonds among farmers so as to support the success of paddy rice productivity, this support becomes the strength of the community by symbolizing the collaboration of all elements in the community.



confidence in long-term investment policies, such as education and renewable energy, supports public confidence in long-term problem-solving (Busemeyer and Beiser-McGrath, 2024).

Integration and Contribution of Trust to Rice Productivity: Integration and Contribution of Trust to Rice Productivity Rice Paddy, from the perspective of rural sociology, includes synergies between individual, institutional, and community beliefs that create a collaborative and productive environment. Individual trust in ability and reputation, institutional transparency and consistency, and social solidarity within the farming community, together drive the adoption of agricultural technologies and best practices. This increases the productivity of paddy fields, reaching more than 6 tons/ha, the productivity figure is classified as high nationally (BPS; 2023) and strengthening food security and economic welfare in rural areas.

Table 4 shows that the villages of Wawosolo, Puuduria, and Tetemotaha have a fairly high level of rice productivity,

which is above 6 tons/ha, which is influenced by individual, institutional, and community trust. Individual trust, which includes technical, managerial, and adaptable abilities, as well as reputation and integrity, strengthens collaboration and knowledge sharing between farmers. In all three villages, technical capabilities in pest control, pesticide use, and irrigation system regulation are strongly emphasized. Managerial skills that include planning, organizing, and executing consistent with planning are also essential. In addition, adaptability to the climate and efficient agricultural technology support increased productivity. Institutional trust, through transparency in financial processing and decision-making, as well as consistency in meeting schedules and work program implementation, strengthens trust in local institutions. Social solidarity in the regulation of irrigation systems, cooperation, and information exchange also plays an important role. This combination of individual, institutional, and community beliefs supports the adoption of sustainable farming practices and increases crop yields. The study

Table 4. Integration and Contribution of Trust to Rice Productivity.

No.	Village	Individual beliefs	Institutional trust	Public Trust	Productivity tons/ha
1	Wawosolo	Competence Technical abilities (skilled in fertilizing, seeding, regulating irrigation systems from irrigation, proper use of pesticides) Managerial skills (planning: planting plan, organizing: use of labor, use of agricultural tools and machinery; Adaptability: (climate, use of agricultural technology) Considered: Integrity: (honest, responsible, transparent,)	Transparency (financial processing, aid distribution, decision-making) Consistency (regular meeting schedule, implementation of work programs, implementation of internal rules,	Social solidarity (joint arrangement in the irrigation system, mutual cooperation in the planting and harvesting season)	6,2
2	Puuduria	Technical skills (skilled in pest and disease control, regulating irrigation systems from irrigation) Managerial skills (Planning: planting plan, budget plan; organizing: use of labor, use of agricultural tools and machinery; implementation: consistent with planning) Adaptability: (climate, use of agricultural technology) Considered : Integrity: (consistent, honest, responsible, tolerant)	Transparency (financial processing, decision-making) Consistency (regular meeting schedule, implementation of work programs, implementation of internal rules),	Social solidarity (joint arrangement in irrigation systems, exchange of information and farming knowledge,)	6,1
3	Tetemotaha	Technical skills (skilled in fertilization, pest and disease control, seeding, proper use of pesticides) Managerial skills (Planning: planting plan, budget plan; organizing: use of labor, use of agricultural tools and machinery; implementation: consistent with planning) Adaptability: (climate, use of agricultural technology) Considered: Integrity: (consistent, honest, responsible, transparent, tolerant)	Transparency (financial processing, aid distribution, decision-making) Consistency (regular meeting schedule, implementation of work programs, implementation of internal rules,	Social solidarity (joint arrangement in irrigation systems, exchange of farming information and knowledge, mutual cooperation in the planting and harvesting seasons)	6,2



explores the integration of industries in Chinese tourism, which increases the productivity of tourism companies through cross-sector collaboration. This research adapts the capability maturity model to develop productivity in the infrastructure sector, integrating the CMMI concept to understand and improve resource efficiency and digitalization (Laitinen *et al.*, 2024). This study explores the decision-making process that allows individuals to balance work, family, and personal responsibilities, as well as their impact on personal satisfaction and organizational productivity (Cachutt-Alvarado *et al.*, 2024). This study aims to determine the pattern of strengthening social capital in increasing agricultural productivity in Tridana Mulya Village, with a focus on the trust and cooperation of rice farmers. In field experiments in Baramati during kharif 2016-2018, FAST, a multinutrient fertilizer, was proven to increase rice productivity with recommended applications (Syed *et al.*, 2020).

Here's an analysis focusing on two case studies from the data: **Case Study 1. Wawosolo Village:** In Wawosolo Village, we can observe a strong interplay between individual competence and community trust. The data highlights that farmers in this village possess advanced technical abilities, particularly in fertilizing, seeding, and managing irrigation systems. One notable farmer has built a reputation for his expertise in these areas. His competence has not only improved his own farm's productivity but has also fostered a culture of knowledge-sharing within the village.

His integrity described as honest and transparent, has strengthened institutional trust. He actively participates in farmer group meetings, ensuring transparency in financial processing and aid distribution. This has led to increased participation in community programs and a more efficient distribution of resources. The village's high productivity of 6.2 tons/ha can be attributed to this synergy of individual expertise and community trust. For instance, when a new pest-resistant rice variety was introduced, Pak Andi's endorsement and transparent explanation of its benefits led to widespread adoption in Wawosolo, significantly contributing to the village's productivity.

Case Study 2. Tetemotaha Village: Tetemotaha Village presents an interesting case of how social solidarity enhances productivity. Here, we see a strong emphasis on joint management of irrigation systems and cooperation during planting and harvesting seasons. A group of farmers, led by Ibu Siti, initiated a collective approach to water management. They organized regular meetings to discuss water allocation, especially during dry seasons, ensuring fair distribution among all farmers. This collective approach, rooted in strong social trust, has had a tangible impact on productivity. Farmers report more efficient water use, leading to better crop yields. Moreover, the practice of gotong royong (cooperation) during peak farming periods has allowed even smaller farms to access labor and equipment they might not afford

individually. This social solidarity, combined with the village's commitment to knowledge sharing, has created a supportive environment for innovation adoption. For example, when a new organic fertilizer was introduced, farmers in Tetemotaha were quick to experiment collectively, sharing risks and benefits. This collaborative spirit, underpinned by strong community trust, has contributed significantly to the village's impressive productivity of 6.2 tons/ha. These case studies illustrate how trust, manifested through individual competence, institutional transparency, and social solidarity, creates tangible impacts on agricultural practices and productivity in Wonggeduku District. They demonstrate that trust is not just an abstract concept but a practical force that shapes farming outcomes at the grassroots level.

The analysis of trust in Wonggeduku District's rice farming communities reveals a complex, interconnected ecosystem encompassing individual, institutional, and community levels. At the individual level, trust is built on farmers' technical competence, managerial skills, and personal integrity, forming the foundation for broader trust networks. Institutional trust, characterized by transparency in financial management and decision-making, along with consistency in operations, serves as a bridge between individual and community trust. Community trust, manifested through social solidarity practices like collective resource management and mutual aid, creates a supportive environment for knowledge sharing and innovation adoption. These three levels of trust are not isolated but rather reinforce each other: competent and trusted individuals strengthen institutional credibility, which in turn facilitates community-wide cooperation. This synergy is evident in the high rice productivity (exceeding 6 tons/ha) observed in villages like Wawosolo, Puuduria, and Tetemotaha, where strong individual abilities, transparent institutional practices, and robust community bonds create a resilient and productive agricultural system. The interplay between these trust levels influences various aspects of farming, from resource management and knowledge transfer to conflict resolution and innovation adoption, highlighting the need for holistic approaches in agricultural development that address all three dimensions of trust simultaneously.

Based on the qualitative data provided, a thematic analysis reveals three primary themes that emerge across the individual, institutional, and societal contexts of trust among rice farmers in Wonggeduku District: Competence and Integrity, Transparency and Consistency, and Social Solidarity. The theme of Competence and Integrity is prominent in the individual context, where farmers' technical abilities, managerial skills, and adaptability form the foundation of trust. This is complemented by personal integrity, characterized by honesty, responsibility, and transparency. In the institutional context, the themes of Transparency and Consistency come to the fore, with emphasis on clear financial processing, fair distribution of



aid, and transparent decision-making. Consistency in meeting schedules, program implementation, and adherence to internal rules further reinforces institutional trust. The theme of Social Solidarity emerges strongly in the community context, manifesting in collaborative practices such as joint management of water resources, knowledge sharing, and mutual assistance during planting and harvesting seasons.

These themes interweave to create a robust framework of trust that contributes significantly to rice productivity in the region. The data suggests that villages demonstrating high levels of trust across all three contexts – individual, institutional, and societal – achieve rice productivity levels exceeding 6 tons per hectare. This productivity is underpinned by the synergy between individual farmers' competencies, transparent and consistent institutional practices, and strong community bonds. The thematic analysis reveals that trust acts as a catalyst for the adoption of sustainable farming practices, efficient resource management, and effective knowledge transfer. Furthermore, the integration of these trust elements creates a resilient agricultural system capable of adapting to challenges and optimizing productivity, highlighting the crucial role of multifaceted trust in enhancing agricultural outcomes in rural communities.

Conclusion: The conclusion of this study confirms that trust as social capital plays an important role in increasing the productivity of paddy fields in rural areas. Through a qualitative approach with a case study method, this study found that trust between farmers encourages collaboration, solidarity, and sharing of knowledge and resources, all of which contribute to more effective and sustainable agricultural practices. Trust in local agricultural institutions has also been shown to increase the effectiveness of training and technical support, strengthening the adoption of new technologies and sustainable agricultural practices. In addition, trust at the community level supports the social support needed to implement significant change. In synergy, trust in the context of individuals, institutions, and communities contributes to increased crop yields and community well-being. The results of this study provide important insights into the importance of building and maintaining trust as social capital for agricultural success and sustainable rural development. The findings from the analysis of trust in Wonggeduku District's rice farming communities have significant implications for policy-makers and practitioners aiming to enhance agricultural productivity and rural development. First, the multifaceted nature of trust - encompassing individual, institutional, and community levels - suggests that interventions should adopt a holistic approach rather than focusing on a single aspect. Policy-makers should design programs that simultaneously build individual capacities, strengthen institutional transparency and consistency, and foster community solidarity. For instance, agricultural extension programs could combine technical

training (individual level) with improvements in local agricultural organizations' governance (institutional level) and the promotion of collective farming practices (community level). Second, the strong link between trust and productivity highlights the importance of "soft" factors in agricultural development. While technological and infrastructural investments remain crucial, policy-makers should allocate resources to trust-building initiatives, such as community-led projects, transparent decision-making processes, and platforms for knowledge sharing. Third, the success of villages like Wawosolo, Puuduria, and Tetemotaha in achieving high productivity through strong trust networks suggests that these communities could serve as models for peer-learning programs. Practitioners could facilitate farmer-to-farmer exchanges or establish demonstration sites in these high-trust, high-productivity villages. Fourth, the role of individual integrity and competence in building broader trust networks indicates that leadership development should be a key component of rural development strategies. Programs to identify and nurture local agricultural leaders could have multiplier effects on community trust and productivity. Finally, the interconnected nature of trust levels implies that policy-makers should adopt adaptive, context-specific approaches. What works in one community may not work in another, necessitating flexible policies that can be tailored to local trust dynamics. By addressing these implications, policy-makers and practitioners can leverage the power of trust to create more resilient, productive, and sustainable agricultural communities.

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REFERENCES

- Aassve, A., T. Capezzone, N. Cavalli, P. Conzo and C. Peng. 2024. Social and political trust diverge during a crisis. *Scientific Reports* 14:331.
- Adewusi, A.O., O.F. Asuzu, T. Olorunsogo, C. Iwuanyanwu, E. Adaga and D.O. Daraojimba. 2024. AI in precision agriculture: A review of technologies for sustainable farming practices. *World Journal of Advanced Research and Reviews* 21:2276-2285.
- Amuda, Y.J. and S. Alabdulrahman. 2024. Cocoa, Palm Tree, and Cassava Plantations among Smallholder Farmers: Toward Policy and Technological Efficiencies for Sustainable Socio-Economic Development in Southern Nigeria. *Sustainability* 16:477.
- Arum, P.S., J.T. Ibrahim and A. Bakhtiar. 2023. The Effect of Social Capital on Farmer Welfare. *Agricobis: Journal of Agricultural Socioeconomics and Business* 6:180-188.
- Ataei, P., A.M. Dastenaeei, N. Izadi, H. Karimi and M. Menatizadeh. 2024. The predictors of social capital in agricultural consultation, technical, and engineering service companies. *Heliyon* 10.
- Audretsch, D.B. and M. Belitski. 2024. Knowledge collaboration, firm productivity and innovation: A critical assessment. *Journal of Business Research* 172:114412.
- Balaji, G.A., V. Geethalakshmi, A. Senthil, M. Prahadeeswaran, S. Iswarya, M. Rajavel, K. Bhuvaneswari, B. Natarajan, K. Senthilraja and R. Gowtham. 2023. Assessment of Economic Efficiency and Its Determents for Mixed Crop Livestock Production under Dryland Agriculture System in the Western Zone of Tamil Nadu, India. *Sustainability* 15: 8332.
- Batool, S. and M. Nazir. 2023. SWOT ANALYSIS AND STRATEGY OPTION IN DEVELOPMENT: A CASE OF PAKISTAN'S AGRICULTURE SECTOR. *Pakistan Journal of Agriculture, Agricultural Engineering and Veterinary Sciences* 39:149-156.
- Bencsik, A. and T. Juhasz. 2020. Impacts of informal knowledge sharing (workplace gossip) on organisational trust. *Economics & Sociology* 13:249-270.
- Bernard, C., X. Poux, I. Herzon, J. Moran, T. Pinto-Correia, D.E. Dumitras, M. I. Ferraz-de-Oliveira, F. Gouriveau, D. Goussios and M.I. Jitea. 2023. Innovation brokers in High Nature Value farming areas: a strategic approach to engage effective socioeconomic and agroecological dynamics.
- Bonilla, J.D., A. Coombes, D. Romney and P.C. Winters. 2024. Changing the logic in agricultural extension: evidence from a demand-driven extension programme in Kenya. *Journal of Development Effectiveness* 16:118-141.
- Busemeyer, M.R. and L. Beiser-McGrath. 2024. Social policy, public investment or the environment? Exploring variation in individual-level preferences on long-term policies. *Journal of European Social Policy* 34:36-52.
- Cachutt-Alvarado, C., I. Méndez-Gómez-Humaran and J. Velasco-Álvarez. 2024. Personal Competencies for Work-Family Integration and Its Relationship with Productivity and Comprehensive Health in Salaried Professionals. *Safety* 10:28.
- Chaubey, D., V. Prakash, T.C. Yadav and G. Singh. 2018. Doubling of farmers' income through integrated farming system approaches in Bihar-a review. *International Journal of Current Microbiology and Applied Sciences* 7:1602-1613.
- Dardas, L. A., A.M. Malkawi, S. Sweis, N. Sweis, A. Al-Khayat and F.A. Sawair. 2023.. Mapping Two Decades of Research Productivity in the Middle Eastern and Arab Countries: A Comprehensive Bibliometric Analysis. *Publications* 11:48.
- Dasgupta, S., N. van Maanen, S.N. Gosling, F. Piontek, C. Otto and C.F. Schleussner. 2021. Effects of climate change on combined labour productivity and supply: an empirical, multi-model study. *The Lancet Planetary Health* 5:455-465.
- Daum, T., F. Baudron, R. Birner, M. Qaim and I. Grass. 2023. Addressing agricultural labour issues is key to biodiversity-smart farming. *Biological Conservation* 284:110165.
- Ellahi, A., Q.U. Ain, H.M. Rehman, M.B. Hossain, C.B. Illés and A. Tanwee. 2024. The impact of omnichannel integration towards customer interest in alternatives: retailer uncertainty and web rooming in retailing. *Cogent Business & Management* 11:2316931.
- Fuglie, K.O. and R.G. Echeverria. 2024. The economic impact of CGIAR-related crop technologies on agricultural productivity in developing countries, 1961–2020. *World Development* 176:106523.
- Habyarimana, J., M. Humphreys, D.N. Posner and J.M. Weinstein. 2007. Why does ethnic diversity undermine public goods provision? *American political science review* 101:709-725.
- Hanley, C. 2019. *Where Bad Jobs Are Better: Retail Jobs Across Countries and Companies*. SAGE Publications Sage CA: Los Angeles, CA.
- Hoang, V. 2021. Impact of contract farming on farmers' income in the food value chain: A theoretical analysis and empirical study in Vietnam. *Agriculture* 11:797.



- Horoshkova, L., R. Karbivnychi and O. Maslova. 2022. Multi-vector management model of decentralization program management in Ukraine. *University Economic Bulletin* 83-97.
- Husodo, T., I. Wulandari, O.S. Abdoellah, M.F. Cahyandito and S.S. Shanida. 2021. Impact of Agricultural Land Changes on Farmers' Income in Cirasea Watershed, Bandung Regency, West Java. *Indonesian Journal of Environmental Management and Sustainability* 5:95-104.
- Joseph, D.S., P.M. Pawar and K. Chakradeo. 2024. Real-time plant disease dataset development and detection of plant disease using deep learning. *IEEE Access*.
- Khan, N., J. Ma, H. Zhang and S. Zhang. 2023. Rural Farmers' Perceptions for the Impacts of Climate Change and Adaptation Policies on Wheat Productivity: Insights from a Recent Study in Balochistan, Pakistan. *Atmosphere* 14:1278.
- Laitinen, K., M. Luhtala, M. Örmä and K. Vaismaa. 2024. Productivity development enablers in the infrastructure sector: capability maturity model integration approach. *Built Environment Project and Asset Management* 14:201-227.
- Miller, S.R., F. Moore and L. Eden. 2024. Ethics and international business research: Considerations and best practices. *International Business Review* 33:102207.
- Naudet, C.J. and M.J. Zahr. 2024. A space-time high-order implicit shock tracking method for shock-dominated unsteady flows. *Journal of Computational Physics* 501:112792.
- Niles, M.T. and C.R.H. Wagner. 2019. The carrot or the stick? Drivers of California farmer support for varying groundwater management policies. *Environmental Research Communications* 1:045001.
- Njisane, Y. Z., F. E. Mukumbo and V. Muchenje. 2020. An outlook on livestock welfare conditions in African communities—A review. *Asian-Australasian journal of animal sciences* 33:867.
- Noor, N.H.M., S.H.A.B. Ah and M.A. Idris. 2016. Fostering knowledge sharing through care culture: a comparison study of membership-oriented and service-oriented NGOs in Malaysia. *International Journal of Social Science and Humanity* 6:489.
- Syed, S., P. Patil, S. Karanje, A. Karpe and P. Gharge. 2020. Effect of multinutrient fertilizer FAST (Ferrous, Ammonium, Sulphate) on growth, yield contributing characters and yield of rice. *International Journal of Chemical Studies* 8:239-242.
- Wahid, B., N. Purwanti and U. Mardiyah. 2022. Olebolo: Sastra Lisan dan Ritus Petani (Kolaborasi Kearifan Lokal dan Rekayasa Sains dalam Praktik Petani di Tidore). *Jurnal Noken: Ilmu-Ilmu Sosial* 7:249-262.
- Wolf, D.J. and A. Specker. 2024. Increasing Consistency, Traceability and Transparency in Data Science Projects: Analysis and Framework.

