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KNOWLEDGE SHARING BEHAVIOR AMONG FARMERS IN INDONESIA: DOES SOCIAL CAPITAL MATTER?

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ABSTRACT

Social capital has three important dimensions, namely, cognitive, relational and structural. It has a crucial role to enhance farmers' income and knowledge in some developing countries. However, there is a lack of studies which validate the role of social capital to farmers' income and knowledge sharing. The aims of this study are to examine the role of farmers' social capital on knowledge sharing behavior through farmer community and personal expectations. The recent study also examines how mediators' variables (individual and community expectations) influence farmers' knowledge sharing behavior. The study sample consisted of 720 Indonesian rice farmers from Sulawesi districts and Structural Equation Modeling (SEM) was used to test the research hypotheses. The empirical result indicates that structural, cognitive and relational social capital have a positive role in farmers' expectations. They facilitate community members in rural areas and connect people locally and regionally, as mediator variables, personal and community expectations also emerged as tools where people can explore, interact and share their expertise to develop knowledge sharing behavior. However, community expectations have a greater effect on facilitating knowledge sharing among farmers than personal expectations. This study provided insights on developing and enhancing farmers' economic and social life, which was neglected in prior studies. This research contributes to the literature on social capital theory and social connectedness. Hence, the farmers and the local government should address and identify their objective and rational concerns to improve their social capital. In addition, social capital also enhances the content and processes of farmers' interactions to foster communication and value propositions in creating unique and valuable experiences. Local government should be aware of the essential components of interaction and effective two-way communications among farmers. Furthermore, social capital can also be treated as a tool that allows farmers to share their expertise and knowledge. The community and local government should solve problems for farmers in the future since it is easier and faster to access information and knowledge about production processes. Social capital also has economic and social value, enhancing a sense of belonging among farmers.

Key words: Social capital, Farmer expectation, Knowledge Sharing behavior, Developing countries



INTRODUCTION

Recently, rural communities have faced a low level of economic growth and a high rate of unemployment. Underemployment and abundant labor are the two main characteristics of a rural area in developing countries [1, 2]. Moreover, 43.85% of people worldwide are farmers, and several programs, including agriculture and education, can enhance farmers' income [3]. Hence, rural to urban migration may be reduced by enhancing farmers' human resources to enhance their skills and income. Social capital toward collaboration in work and interaction among farmers in developing countries has a crucial role in improving their well-being. However, some scholars offered different solutions. For instance, people who live in rural areas need to build communication, interaction, share value and resources, and trust each other [4, 5]. Over a decade, agriculture has had a crucial role in enhancing 9.7 billion people by 2050 and contributing to 4% of GDP in some developing countries [6]. In 2019, this sector's value increased by 2.3%, with a trade of \$20 billion. For most African and Asian countries, the farmer lacks access to social capital such as interpersonal communication, interaction, social ties, trust and the share of norms and values. Hence, their value is lower than in developed countries. Social capital possibly enhances the farmer's position in communities and society [6]. However, the social capital also has a strong correlation with farmer expectations in both personal expectations and community expectations toward enhancing their trust, sharing knowledge, developing relationships among members and non-members in the community [4]. Those dimensions are of high value to people, which can directly affect their performance and those who want to enhance their products [8] and intellectual capital [9, 10].

Indonesia is the biggest country in South East Asia with 12-13% of its national GDP contributed by the agricultural sector [6]. The number of farmers in Indonesia plummeted to 28% by 2021 compared to 1976 where 65.8% of population was farmers. Furthermore, 9% of farmers are young generation and 91% are over 40 years old. Hence, some scholars predict no agricultural workers in Indonesia by 2063 [12, 13]. One of the main reasons why the young generation is unenthusiastic about farming is because farming does not provide certainty income and wellbeing, caused by uncertain prices of agriculture products [15]. Some scholars revealed that social capital among farmers has the potential to enhance the number of farmers among Z generation and should be enhancing farmer well-being worldwide. The rapid growth of communication and information across the regions makes the farmers' knowledge and products a crucial issue [19]. Farmers who may not have knowledge and information to keep up with the community can help



advance many aspects of traditional agriculture approach and also social capital significantly contributed to the farming sector [16].

Commonly, social capital has two famous classifications namely network viewpoint (for example, bonding, bridging and linking) and social structure (for example, structural, cognitive and relational). The bonding and bridging social capital dimensions are useless in some situations, such as communication and interaction, to support communication and interaction among community members [14]. Whereas, the social structure social capital can facilitate the connection and sustenance of the relationship among the people. It also pursues collective action among people. Hence, the concept of social structure social capital has been recognized by World Bank. Moreover, those dimensions are more visible and applicable in a digital era where social media is used for a massive amount of communication and interaction.

The contradictory results from different regions have highlighted the academic and practical reasons for examining the relationship between social capital, trust, knowledge sharing among farmers and their decision-making process. Preliminary studies have found social capital has a positive effect on enhancing farmer income in Nigeria [7], Sri Lanka [10], Europe [3] and Iran [4]. On the other hand, social capital significantly correlates with the farmer's production process. However, prior studies focus more on how farmers exchange knowledge based on the Western context [13] and the bridging and bonding of social capital. Therefore, scholars fail to validate which factors affect trust and knowledge flow. Thomas *et al.* [10] and Stöber *et al.* [13] recommended that future studies investigate the essential role of social capital on farmer communication and interaction across the culture and country on farmer knowledge exchange process. World Bank also recommends cognitive, structural and relational dimensions in the social sciences [15].

This study addresses this gap by examining the relationship between social capital, trust and knowledge sharing among farmers in Indonesia. Furthermore, this study will also investigate the role of trust as a mediator between social capital and knowledge sharing. It can help achieve a holistic view of the relationship between these variables and give insights to farmers and industry players. It can assist in testing the generalizability of social capital theory (SCT) more comprehensively. Building upon earlier studies' discussion on agriculture and farmer patterns across the countries and combining this with insights from the literature, this study provides answers to the following research questions:

RQ1. Does the level of social capital play a crucial role in farmer trust?



RQ2. Does social capital positively affect farmer knowledge exchange, mediated by farmers' expectations?

In answering these questions, the recent research provides several theoretical and practical contributions. First, this study links social capital and knowledge sharing behavior in the agriculture context. Hence, this study provides a distinguished understanding of social capital's role in agricultural and rural development. Second, prior studies that examine the relationship between social capital and farmer performance have neglected the empirical study [4, 10, 13, 20, 23]. It can help academicians and practitioners better understand the factors that affect farmer social capital to their trust, which subsequently influence their decision to exchange knowledge.

LITERATURE REVIEW

Social capital theory

Social capital occurs in every type of group, including clubs, communities and any other group in between. Some scholars revealed social capital's essential role in integrated rural development strategies [3, 8]. Junaidi [15] and Lefebvre *et al.* [16] revealed that religion and social capital have a positive effect on people's attitude and behavior in Indonesia. Social capital also can be developed to respond to the challenges faced by rural economies to improve their livelihoods and prosperity [3, 11, 14]. Social capital can bridge the relationships among people who share some aspects, which facilitates the ability of that society to function toward three common dimensions: structural, cognitive and relational [12]. Structural social capital refers to communication and social interaction, which builds up the need to access resources through social interaction ties. Social interaction is a channel for information flow and sharing in the structure-function. Language sharing and vision sharing are two dimensions of cognitive and social capital, including values, attitudes, beliefs and perceptions of support [17]. Language sharing is about acronyms, subtleties and underlying assumptions, whereas vision sharing, refers to sharing the common goals of combining or integrating resources [18, 19]. In turn, those resources that provide shared interpretations, representations, and systems of meaning among members are cognitive social capital.

People build relationships, spend time on social interaction and maintain social ties with others through the shared language of cognitive and social capital. They exchange knowledge capital and ask questions using a common language to increase their abilities to gain accurate, adequate, credible and timely information [12]. Interpersonal relationships such as reciprocity, respect and trust make up



relational social capital [18]. People develop relationships with others to gain social opportunities through interaction. They trust each other and reciprocate favors or other social resources, such as information sharing on social media. In summary, structural social capital is related to social interaction ties, cognitive social capital is regarded as shared language and relational social capital is associated with sources of interpersonal relationships. They interact with others to build relationships and maintain social ties through shared language and a vision of cognitive social capital. Interpersonal relationships such as reciprocity, respect, and trust are known as relational social capital. As a result, they engage in mutually reciprocal favors, including sharing knowledge to access specific resources or acquire information [19].

Knowledge sharing behavior

Knowledge sharing is defined as a fundamental action to develop knowledge among two or more people in the community or group. At least four factors possibly influence the knowledge-sharing process: the nature of knowledge, motivation to share, opportunities to share and culture of the work environment. Factors that predict a person's willingness to share knowledge with others include expectations of access to education, financial and human resources; the extent of collectivist values, reciprocating interpersonal trust and self-efficacy. It has a positive effect on enhancing farmers' production processes [16, 20]. Knowledge sharing refers to community members who convey knowledge to others offline and online [21]. Supposedly by directly writing posts, responding to the posts of others, providing links to sources, or uploading a source, for example. Individuals share knowledge by sharing their experiences and information within a community.

The individual value of knowledge has become essential in influencing knowledge sharing. In addition, personal motivation internal and external factors influence the motivational factors to share knowledge. Internal factors are perceived factors attached to knowledge and the reciprocity that result from sharing, while external factors include a relationship with the recipient and rewards for sharing [13, 23]. The communities' members facilitate and support knowledge sharing activities to ensure broad discussion in their communities and societies. Farmers share their knowledge through interaction and communication [13, 16]. They often share knowledge collaborating on discussion of concepts, ideas, assignments and term projects.



RESEARCH DEVELOPMENT AND HYPOTHESES

The relationship between social capital and outcome expectation

Social capital determines individual and community expectations, increasing the frequency of communication, interaction and value among farmers. Structural social capital includes a sense of duty, identity, norms, and shared values among people [12]. In addition, it also refers to shared values and characteristics among people in the agriculture field. It is social interaction that connects people and units [12]. The economic and social outcomes are the processes of social capital through interrelated connections between farmers. Strong affinity in their relationships positively affects personal and community values, which emanate from social capital and increase group and individual values. The farmer's ability and competence possibly influence the outcome of social capital [22]. Trusting behavior and trustworthiness occur in social connections, enhanced by community interaction. Personal and community members hold shared values, beliefs and behaviors regarding economic and social benefit from their decision [24]. A high perception of shared values leads to the volume of the outcome. The following relationship between connectivity, shared values and trust in online interaction among farmers is proposed for Hypothesis 1.

H1a. Structural social capital has a positive effect on personal farmer outcomes.

H1b. Structural social capital has a positive effect on community farmer outcomes.

Shared goals ensure that farmers' diverse interests achieve commonality through enduring, normative and fundamental behavior guides. It improves their contributions and outcomes toward collaboration [24]. Rural people establish social relationships through interaction and communication based on cognitive social capital. A vital relational resource in the exchange relationship is developing mutually beneficial communication and shared goals [12]. The farmers contribute and share experiences and intellectual capital to enhance relationships by developing shared goals [23]. They tend to create positive expectations towards exchange relationships with shared goals. Cognitive social capital influences outcome perception among people [25] and provides collaboration and knowledge exchange among rural people through shared goals or visions for interpersonal relationships [19]. Cognitive social capital includes the dimensions of attitudes, beliefs and support perceptions relevant to shared goals, language and vision [17]. Shared goals and interactions increase the level of outcomes among farmers.

H2a. Cognitive social capital has a positive effect on personal farmer outcomes.

H2b. Cognitive social capital has a positive effect on community farmer outcomes.



Relational is the degree to which a firm facilitates mutual alliance relationships among the people. It has a solid social tie with affiliation and influences the behavior of the people [24]. Relational social capital is related to people's interaction [12]. It increases long-term collaboration and strategic partnerships. The farmers are more willing to develop mutual understanding and share knowledge with relational ties for long-term relationships. Strong social relationships with a group culture and a governance system can reinforce collaborative partnership and resource sharing. It creates positive expectations and a strong sense of confidence among communities. Strong social ties predict community members' behavior and help foster a sense of affiliation and reciprocity. Relational social capital creates trust, which promotes the outcome among farmers. It is an antecedent of fostering inter-organizational value in an uncertain context. Social ties positively affect alliance relationships, which subsequently develop trust among farmers. Thus, relational social capital increases the level of outcome.

H3a. Relational social capital has a positive effect on personal farmer outcomes.

H3b. Relational social capital has a positive effect on community farmer outcomes.

The relationship between community-/personal outcome and knowledge sharing
The expectation of outcome is a crucial factor in pursuing collaboration among the personal and community. It evokes knowledge sharing behavior, facilitates access to resources and ensures righteousness to improve cooperation among people [20, 21]. With common goals or one characteristic in rural areas, farmers need to increase their intellectual capital and skill. They share common and positive viewpoints based on value. Thus, farmer community members build communication and frequency ties through a share of knowledge due to having the same outcome. Community and personal outcome expectations possibly enrich interpersonal relationships and encourage collaboration and knowledge exchange. Social interaction and communication are the media for knowledge flow. The increase in farmers' performances sparks knowledge sharing. In particular, they will share knowledge when they successfully develop trust and outcomes with each other [19]. Community and personal outcome expectations have three common dimensions: the physical, social and self-evaluation effect.

The recent study also considers social capital dimensions structural, cognitive and relational to predict knowledge sharing through personal-outcome expectations toward recognition, respect, and interaction with more peers. Other factors, including trust, are crucial motivating factors in sharing knowledge in rural areas among farmers [22, 26]. They believe that they help each other to solve problems



based on the principle of trust. Trust is a crucial factor of knowledge sharing behavior due to its influence on the competence, benevolence, integrity and predictability of personal to conform to obtain better connection and benefit. It also possibly helps the community to enrich the knowledge base among the communities' members, leading to stronger collaborative partnerships for knowledge sharing [22]. Hence, this study proposes hypotheses.

H4a. Personal outcome expectation have a positive effect on knowledge sharing behavior.

H4b. Community outcome expectation have a positive effect on knowledge sharing behavior.

MATERIALS AND METHODS

Questionnaire design, pretest and pilot study

This study adopted multi-item scales from prior studies with high reliability and validity for all constructs. A pretest was conducted to revise and validate the wordings of measurement items for the Indonesian farmers. Subsequently, this study conducted a pilot test of the measurement items and constructs to ensure the final wordings for the formal survey toward examining the reliability analysis, convergent validity and discriminant validity with the suggested criteria before the formal survey.

Sample and data collection

The target population of this study was Indonesian rice farmers. Although Indonesia is one of the big agricultural countries worldwide, there was no research to validate these relationships among the farmers' social capital and skill. Data were collected from 1st May 2021 to 30th June 2021. There were 668 valid samples out of 720 samples, indicating a completion rate of 92.77 %.

Measures

The items used in the measurement are presented in the Appendix. They include structural social capital, cognitive social capital, relational social capital, community, personal outcome expectations and knowledge sharing behavior. This study measured respondents' demographics such as gender, age, education and farming period. Within the questionnaire, a seven-point Likert scale was anchored between 1 ("strongly disagree") and 7 ("strongly agree") for all the scale items. Structural social capital refers to communication, social interaction and relationships with shared values among farmers. Cognitive social capital refers to the extent of communication, shared goals, language and vision. Relational social



capital refers to entrenching interpersonal relationships such as reciprocity and respecting each other. A measurement tool for structural social capital, cognitive social capital and relational social capital was adapted from [18], with four, five and six items assigned for each construct, respectively. Community and personal outcome expectations refer to the calculative and rational characteristics such as farmers' competence, reliability and responsibility adapted from [27] with five items assigned for each construct. A measurement tool for knowledge sharing behavior was adapted from [21] with five items.

RESULTS AND DISCUSSION

Measurement model

The measurement model used in this study was the AMOS software with maximum likelihood estimation. The model fit showed how well a CFA model reproduces the covariance matrix of the observed variables. The measurement model showed adequate fit [28]: $\chi^2/df = 3.514$, goodness-of-fit index (GFI) = 0.873, non-normed fit index (NFI) = 0.878, comparative fit index (CFI) = 0.909, incremental fit index (IFI) = 0.909 and root mean square error of approximation (RMSEA) = 0.061. The composite reliability (CR) and an average of variance extracted (AVE) for all constructs above 0.775 and 0.512, thereby demonstrating a reasonable degree of internal consistency between measurement items and their corresponding constructs. In addition, each item loads significantly on its respective construct with factor loadings and squared multiple correlations of all measurement items larger than 0.5 and 0.2. The Cronbach's α for all constructs is larger than 0.7. It indicates good convergent validity for all measurement items and constructs [28].

Structural Model

The model fit of this study was adequate: $\chi^2 = 1419.57$, $df = 396$, $\chi^2/df = 3.585$, GFI = 0.871, NFI = 0.874, CFI = 0.905, IFI = 0.906 and RMSEA = 0.062. Table 3 indicates that all the research hypotheses are supported. This study confirms that social capital has a significant effect on community-outcome expectations ($\gamma_{11} = 0.279$, $p < 0.05$; $\gamma_{21} = 0.467$, $p < 0.001$ and $\gamma_{31} = 0.447$, $p < 0.001$), supporting H1a, H1b and H1c. Personal-outcome expectation depends on the level of social capital ($\gamma_{12} = 0.201$, $p > 0.05$; $\gamma_{22} = 0.401$, $p > 0.001$ and $\gamma_{32} = 0.258$, $p > 0.05$). Hence H2a, H2b and H2c were supported. Both community and personal-outcome expectations had positive effects on knowledge sharing behavior ($\beta_{31} = 0.369$, $p < 0.001$ and $\beta_{32} = 0.272$, $p < 0.05$), supporting H4a and H4b. Table 4 shows the results of research hypotheses.



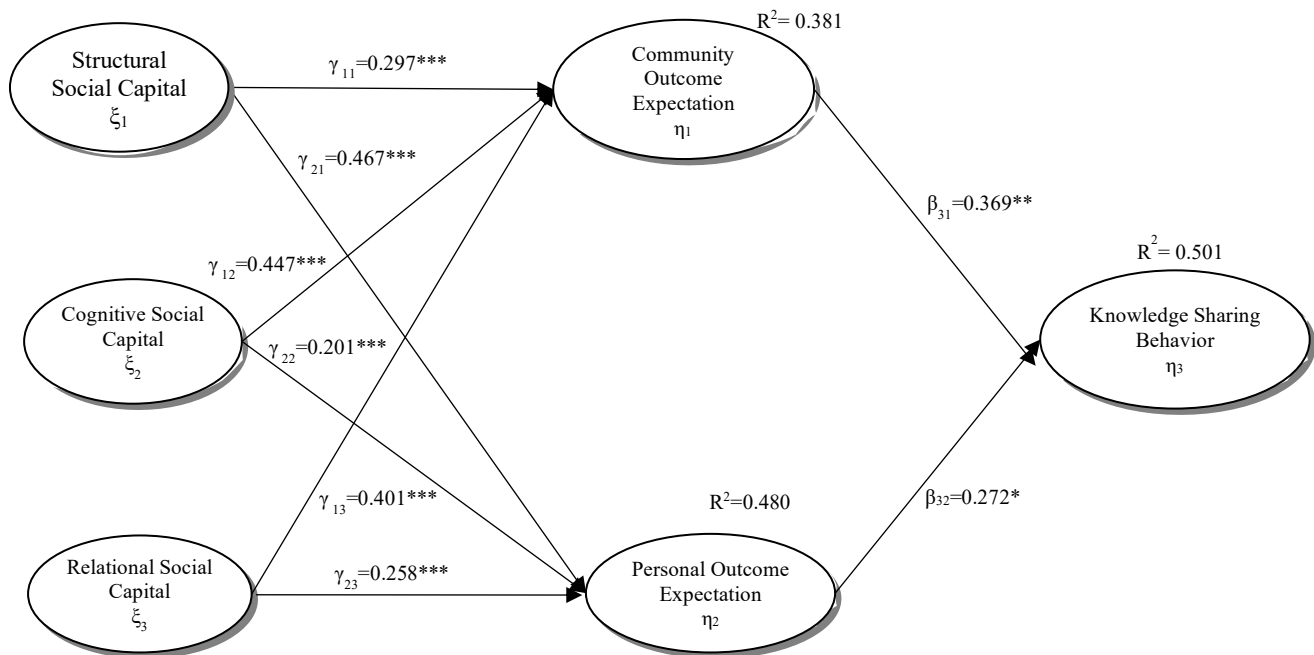


Figure 2: Structural model result

Note. $\chi^2/df = 3.585$, GFI = 0.871, NFI = 0.874, CFI = 0.938, IFI = 0.906 and RMSEA = 0.062
Significant at *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$

Mediation effect

This study examines the mediation effects of community and personal outcome expectations between social capital (structural, cognitive and relational) and knowledge sharing behavior; this study used confidence intervals for bootstrapping method with 5000 simulations. Bootstrapping is a nonparametric statistical procedure in which the dataset is repeatedly sampled [29]. Table 5 shows that all confidence intervals for both the percentile method and bias-corrected do not include zero, indicating that all mediation effects are significant. The regression results indicate that all mediation effects are partial mediators.

Key findings

This study validated the relationships between Indonesian farmers' social capital, community and personal outcome expectations, and knowledge sharing. Social capital possibly facilitates farmers and rural people to enhance their connections, trust and share knowledge with others. This study validates that both social capitals have significant and positive influences on community/personal outcome expectation. It means that farmers obtain positive expectations for individuals and communities toward developing social relationships within and across the area such as African and Asian continents socio-economics, trust, communication and

interaction. Social capital determines to enhance farmers' well-being and innovation toward farm productivity and food security. Social capital also enhances the farmers' chance to access and share resources toward social collateral and also possibly to reduce poverty. Furthermore, mutual understanding and goals also play an essential role during communication and interaction. Both mediator variables have a substantial and positive effect on knowledge sharing behavior. Social capital strengthens users' trust and knowledge sharing with their community members. Furthermore, the findings support the research hypothesis of social capital being an antecedent of outcome expectations that influences knowledge sharing behavior in rural areas. The results were consistent with the findings of prior studies in the social capital in agriculture and rural contexts [16, 21, 22].

The most recent study also provided further evidence that farmers' capacity to develop and put into practice knowledge sharing behaviors can be improved by social capital created through formal and informal interactions and communication. Farmers' collaboration appears to be essential in an economic environment like Indonesia's. Because it enables them to adjust and improve their income, knowledge, and abilities, farmers tend to support one another in the perfect condition. Additionally, farmers' sense of community and belonging is crucial for improving coordination in a variety of sectors, including social and environmental initiatives. A greater coordination and integration of various communal or farmer activities can be a crucial success element for individual and community outcomes as well as knowledge exchange, as demonstrated in particular by case studies of farmers. Farmers' social capital is now a part of the community, and being involved helps them to consider their well-being on a larger scale than just their income. Therefore, social capital is crucial for the growth of agriculture and rural areas.

Implications

This research contributes to the literature on social capital theory and social connectedness. Past researchers have suggested that social capital is suitable for investigating the effect of communication and interaction on farmer behavior [9]. Social capital among farmers provides an appropriate theoretical background for this research, illustrating knowledge sharing behavior. The study of social capital knowledge exchange in rural areas during the COVID-19 pandemic is a widespread issue [22, 23]. However, few studies have established a model that explains social capital's antecedents and the outcome expectations in knowledge sharing behavior. This study provides three ways to make theoretical contributions to the literature on rural communities. First, this study differentiated between different dimensions of social capital and trust. It investigated the relationships between these dimensions of social capital including structural, cognitive, and relational and outcome expectations dimensions namely community and personal,



which subsequently influenced farmers' knowledge sharing behavior. Second, based on social capital theory, this research shows that community and personal outcome expectations partially mediate social capital and knowledge sharing behavior. Past research did not investigate the relationships between the three dimensions of social capital and outcome expectations and the relationships between mediator variables and knowledge sharing behavior. Hence, the findings provide theoretical ground for future research.

CONCLUSION

The findings suggest that farmers and the local government should address and identify their objective and rational concerns to improve their social capital. In addition, social capital should focus on enhancing the content and processes of farmers' interactions to foster communication and value propositions in creating unique and valuable experiences. Local government in some developing countries should be aware of the essential components of interaction and effective two-way communications among farmers. Furthermore, social capital can also be treated as a tool that allows farmers to share their expertise and knowledge. Farmers' social capital also strength farmers relationship and encourage to obtain self/community expectation and achieve shared goals. Social capital should provide economic and social value to its farmers and encourage them to help each other. Furthermore, social capital dimensions also possibly solve developing problems related to famers' well-being. Hence, some countries in African and Asian continents could develop communal coordination and share knowledge to enhance productivity and quality of farming products.

A longitudinal study can help researchers observe farmers' dynamic behavior to elaborate on the content and impact of knowledge sharing behavior among them. There are some limitations to this research. First, this study conducted a cross-sectional survey to examine farmers' behavior. Second, it only considered the situational factors (that is, community and personal outcome expectations) on knowledge sharing behavior. Third, this study considered the relationships between three dimensions of social capital and outcomes perceived from an economic perspective. Future research should also investigate internal factors (that is, institution authority, economic and exceptional knowledge, or community) and external factors (that is, operation ability, organizational comparability and relationships among the farmers) from knowledge sharing behavior. Moreover, this study only focused on Indonesian farmers. Future research can investigate other demographics around the globe to confirm this study's external validity.



Table 1: Respondent demographics

Demographic Items	Frequency	Percentage (%)
Gender		
Male	447	66.9
Female	221	33.1
Age		
20-30 years old	163	24.4
31~45 years old	178	26.64
Over 45 years old	127	19.01
Time period of farmers		
6~10 years	155	23.20
11~15 years	192	28.74
Over 15 years	190	28.44

Table 2: Correlation matrix for measurement scales

Constructs	Mean	SD	SSC	CSC	RSC	COE	POE	KSB
SSC	5.71	0.56	0.727					
CSC	5.90	0.622	0.456**	0.716				
RSC	5.66	0.78	0.364**	0.577**	0.762			
COE	5.19	0.84	0.430**	0.600**	0.631**	0.757		
POE	5.66	0.64	0.417*	0.628**	0.591**	0.632**	0.734	
KSB	5.54	1.16	0.244**	0.355**	0.331**	0.504**	0.410**	0.759

Note: SSC: Structural Social Capital, CSC: Cognitive Social Capital, RSC: Relational Social Capital, COE: Community-Outcome Expectation, POE: Personal-Outcome Expectation, KSB: Knowledge Sharing Behavior

SD: standard Deviation

Diagonal elements are the square roots of the AVE for each construct

Pearson correlations are shown below the diagonal

Significant at *: $p < 0.05$, **: $p < 0.01$, ***: $p < 0.001$



Table 3: Proposed model results

Hypotheses	Symbol	Path		Coefficients	Test results
H1a	V ₁₁	Structural Social	→Community-	0.279**	Supported
H1b	V ₂₁	Cognitive Social	→Community-	0.467***	Supported
H1c	V ₃₁	Relational Social	→Community-	0.447***	Supported
H2a	V ₁₂	Structural Social	→Personal-Outcome	0.201**	Supported
H2b	V ₂₂	Cognitive Social	→Personal -Outcome	0.401***	Supported
H2c	V ₃₂	Relational Social	→Personal-Outcome	0.258**	Supported
H3a	β ₃₁	Community-	→Knowledge Sharing	0.369***	Supported
H4a	β ₃₂	Personal-Outcome	→Knowledge Sharing	0.272**	Supported

Note: Significant at *: p < 0.05, **: p < 0.01, ***: p < 0.001

Table 4: Mediation effects

IV	M	DV	IV->DV (c)	IV->M (a)	IV+M->DV		Bootstrapping 95% CI	
					IV (c')	M(b)	Percentile method	Bias-corrected
SSC	COE	KSB	0.073	0.652***	0.536***	0.709***	[0.037, 0.308]	[0.048, 0.372]
		Standard Error	0.081	0.053	0.082	0.054		
CSC	COE	KSB	0.164*	0.818***	0.702***	0.658***	[0.042, 0.358]	[0.055, 0.434]
		Standard Error	0.082	0.042	0.071	0.060		
RSC	COE	KSB	0.035	0.688***	0.523***	0.709***	[0.028, 0.254]	[0.034, 0.331]
		Standard Error	0.068	0.032	0.058	0.062		
SSC	POE	KSB	0.194**	0.480***	0.535***	0.710***	[0.019, 0.033]	[0.119, 0.216]
		Standard Error	0.085	0.040	0.082	0.073		
CSC	POE	KSB	0.320**	0.651***	0.702***	0.587***	[0.041, 0.231]	[0.053, 0.280]
		Standard Error	0.089	0.031	0.071	0.086		
RSC	POE	KSB	0.217**	0.489***	0.524**	0.626***	[0.032, 0.187]	[0.042, 0.226]
		Standard Error	0.068	0.025	0.057	0.083		

Note: SSC: Structural Social Capital, CSC: Cognitive Social Capital, RSC: Relational Social Capital, COE: Community-Outcome Expectation, POE: Personal-Outcome Expectation, KSB: Knowledge Sharing Behavior

Significant at *: p < 0.05, **: p < 0.01, ***: p < 0.001



REFERENCES

1. **Glatz C and O Bodi-Fernandez** Individual social capital and subjective well-being in urban and rural Australian areas. *Österreich Z Soziol.* 2020; **45**: 139–163.
2. **Ndungu F, Muliro P, Faraj A and J Matofari** Milk handling practices and utilization ad diary farms and collection centers under rural and peri-urban milk value chain systems in Nakuru County, Kenya. *African J. Food Agri, Nutr. and Dev.* 2021; **21(4)**: 17816–17833.
3. **Rivera M, Knickel KK, Díaz-Puente J and A Afonso** The role of social capital in Agricultural and Rural development: lessons learnt from case studies in seven countries. *J European Society for Rural Soc.* 2019; **59(1)**: 66–91.
4. **Sabet NS and S Khaksar** The performance of local government, social capital and participation of villagers in sustainable rural development. *The Social Science J.* 2020.
5. **Masere TP and SH Worth** Factors influencing adoption, innovation of new technology and decision-making by small-scale resource-constrained farmers: The perspective of farmers in lower Gweru, Zimbabwe. *African J. Food Agri, Nutr. and Dev.* 2022; **22(3)**: 20013–20035.
6. **World Bank.** Agriculture and food. 2020b; Retrieved from <https://www.worldbank.org/en/topic/agriculture/overview> Accessed on July, 29th 2022.
7. **Charatsari C, Lioutas ED and A Koutsouris** Farmer field schools and the co-creation of knowledge and innovation: the mediating role of social capital. *Agri Human Values.* 2020; **37**: 1139–1154.
8. **Kehinde AD, Adeyemo R and AA Ogundeji** Does social capital improve farm productivity and food security? Evidence from cocoa-based farming households in Southwestern Nigeria. *Heliyon.* 2021; **7(3)**: 1–14.
9. **Nahapiet J and S Ghoshal** Social capital, intellectual capital, and the organizational advantage. *Academic of Management Review.* 1998; **23(2)**: 242–266.



10. **Thomas E, Riley M and J Spees** Knowledge flows: Farmers' social relations and knowledge sharing practices in 'Catchment sensitive farming'. *Land Use Policy*. 2020; **90**: 1–9.
11. **Carrico AR, Truelove HR and NE Williams** Social capital and resilience to drought among smallholding farmers in Sri Lanka. *Climatic Change*. 2019; **155**: 195–213.
12. **ACTNews**. Number of farmers in Indonesia decreases as young generation reluctant to work in Agriculture. 2022.
13. **Stöber S, Adinata K, Ramba T, Pagaini N and N S Ulejmanovic** Smallholder farmers' challenges of coping with covid-19 containments: insights from two food regions in Indonesia. *African J. Food Agri, Nutr. and Dev.* 2021; **21(6)**: 18223–18244.
14. **Junaidi J, Chih WH and J Ortiz** Antecedents of information seeking and sharing on social networking. *Int Journal Communication*. 2020; **13**: 5705–5728.
15. **Junaidi J** Religiosity versus profit-loss sharing: how Islamic banks brand fidelity influence the Muslim consumers' commitment. *J Islamic Acc Business Research*. 2022; **13(6)**: 960–976.
16. **Lefebvre VM, Sorenson D, Henchion M and X Gellynck** Social capital and knowledge sharing performance of learning networks. *Int J Information Manag.* 2016; **36(4)**: 570–579.
17. **Lu Y and D Yang** Information exchange in virtual communities under extreme disaster conditions. *Decision Support Systems*. 2011; **50(2)**: 529–538.
18. **Tsai W and S Ghosal** Social capital and value creation: The role of intrafirm networks. *The Academy of Management J.* 1998; **41(4)**: 464–476.
19. **Bliss K, Padel S, Cullen, B, Mullender S, Rasmussen IA and B Moeskops** Exchanging knowledge to improve organic arable farming: an evaluation of knowledge exchange tools with farmer groups across Europe. *Organic Agriculture*. 2019; **9**: 383–398.

20. **Uzokwe CA, IHEME GO, OTEH OU, EWUDE MC and Q URUAKPA** Knowledge, perception and utilization of biofortified cassava and orange-fleshed sweet potato (ofsp) in selected rural areas in Nigeria. *African J. Food Agri, Nutr. and Dev.* 2021; **21(5)**: 18019–18034.
21. **Davenport TH and L Prusak** Working knowledge: How organizations manage what they know. 1998; Boston, MA: Harvard Business School Press.
22. **Dave M** Resilient to crises: How cooperatives are adapting sustainably to overcome COVID-19 induced challenges. *Int J Rural Management.* 2021; **17(1)**: 13–39.
23. **Jalloun RA** Knowledge, attitude and awareness of Saudi adults regarding organic food. *African J. Food, Agri, Nutr. and Dev.* 2022; **22(1)**: 19088–19099.
24. **Chen YH, Lin TP and DC Yen** How to facilitate inter-organizational knowledge sharing: The impact of trust. *Information and Management.* 2014; **51(5)**: 568–578.
25. **Goode S** Keeping the user in the cloud: A cognitive social capital antecedent to use continuance and trust-commitment in personal cloud storage services. *Behaviour & Information Technology.* 2019; **38(7)**: 701–725.
26. **Mwantimwa K** Livelihood information and knowledge needs, access, and exchange in rural communities in the Bunda District. Tanzania, Rural Society. 2020; 30–43.
27. **Compeau DR and CA Higgins** Social cognitive theory and individual reactions to computing technology: a longitudinal study. *MIS Quarterly.* 1999; **23(2)**: 145–158.
28. **Anderson JC and DW Gerbing** Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin.* 1988; **103(3)**: 411–425.
29. **Hayes AF** Introduction to mediation, moderation and conditional process analysis: A regression-based approach (2nd ed.). 2018; New York, NY: Guilford Press.

