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An Understanding the Social Networking of the Pepper Farmers in Bangka Selatan, Indonesia

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Abstract

Currently, the local government has put extra efforts on the pepper as the eminent commodity in Bangka Belitung Islands Province. The concern of the government is emphasized on how to uplift the welfare of the farmer. However, the efforts have not met the expectancy as the society remains at the unfavourable situation. The study aims to understand the social networking among the farmers and the stakeholders as the endeavour to scrutinize the communication pattern amongst them. The data collection was conducted on September 2021. The quantitative data using purposive sampling was employed as the data collection technique. The Ucinet software was applied as the analytic technology by showing the sociogram. The study found how the close relationship amongst the actors affect the farming activity. The finding was expected to be used by policy maker to determine the best extension program in the future so that the farmers can improve their living condition.

Keywords: Pepper Farmer, Social Networking, Uplift Welfare

`1. INTRODUCTION

Pepper becomes the 7th export commodity in Indonesia after oil palm, cacao, coconut, coffee, tobacco and wheat that contributes to the income of the country (Daryanto, 2009). However, pepper remains vital in the global market as it contributes to the 13% of global need (Sulaiman & Darwis, 2018). The productivity of the pepper is considered as low which makes pepper farmer to be unsatisfied with the situation (Daras, 2015). Furthermore, the knowledge of farmers on good agricultural practices are also considered as low which leads thing worse (Vermeulen & Goad, 2006; Bahtera, 2016; Bahtera *et al*., 2020)).

There are at least three main factors why the pepper farmers at the unfavorable situation. The factors are: inadequate knowledge on the good agricultural practices (Vermeulen & Goad, 2006), lack of bargaining position in the global market (Kausar & Zaman, 2011), long supply chain

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(Agustina, Yulia, & Astuti, 2018), and lack of implementation on the use of information technology (Bahtera, Evahelda, Atmaja, & Irwanto, 2021).

The first factor why the pepper farmers are the uneasy situation is the low available access to international trade. The quality of pepper tends to not able compete with the other pepper production countries (Yulia, Bahtera, & Saputra, 2019). It leads to the weak bargaining position of pepper farmer which turns to be unable in competing with other countries such as Vietnam. This can create thing worse as the livelihood of people especially as the pepper farmers will be scarce.

Lack of knowledge on good agricultural practices on pepper farming activity becomes another factor why farmers are in the uneasy situation. Majority of muntok white pepper farmers are elementary school holders (Astuti, Bahtera, & Atmaja, 2019). The level of education can influence the level of understanding on a particular activity someone conducts (Bahtera, Arshad, Sidique, Djama, & Abu-samah, 2016). Besides, most of farmers are lack of experience on pepper farming activity (Yulia & Bahtera, 2020). It exacerbates the condition whereby farmers remain on the unfavourable situation.

The last factor why farmers are as the marginalized party is long supply chain. The smallholders count on selling the commodity to middlemen (Agustina, Yulia, & Astuti, 2018). The reasons why the smallholders depend on the middlemen are vary include: in debt, kinship, and having no access to exporters. The long supply chain will affect to the high cost which turns to reduce the net income of smallholders. It then leads to disability of smallholders to go out of poverty. It shows the weak side of pepper farmers.

Those three main factors explain why smallholders are at the unfavorable situation. In fact, pepper in the province becomes the natural source that contributes to the development of the area. Furthermore, the social capital plays important role in developing a particular commodity so the development of region can be achieved (Bahtera & Hayati, 2018). Thus, the social capital becomes a vital concept to be developed in establishing the pepper as the local commodity. The study on the social network of farmers in the agricultural development is vital to be conducted.

The social organization in the society has relationship with the social network (Bahtera & Hayati, 2018). Voydanoff (2001) argues that there is a causality on the social ties on the social network amongst the people who are influenced by the level of interaction. Furthermore, Pratiwi (2017) states that social network is part of relationship amongst members in the group. The characteristics of the relationship may be used to show the social behavior motive in each involved person in a particular social network.

Lee *et al*., (2013) argues that the network is defined as the relationship map amongst people in the group. It can be called as node. The network mapping explains the structural characteristics such as measurement, centralization, density, homogeneity, and other norms. In short, the social network is a relationship structure of a united society (Knoke, 2013).

In the farming activity, the farmers' position is crucial as it determines their current and future success. Pratiwi (2017) argued that to be success in the farming activity, the farmers should

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be in the central position on the member relationship in farmer group. By having vital position, a famer tends to earn more knowledge which can be used to solve a particular problem faced by farmer in the field.

The social network with the extension service are able to improve the farmer's performance in adopting the technology efficiently (Wang, Lu, & Capared, 2020). Four dimensions of social networks include interaction, trust, learning and reciprocity that may differ result from one and another scholar on the farming activity.

2. MATERIALS AND METHODS

The study was conducted in Bangka Selatan. The data was collected on September 2021. A descriptive quantitative was used to explain the finding on the study. Bangka Selatan Regency was the location of the study. The sampling size of the study was 40 respondents from five villages. Purposive sampling was employed as sampling method of the study. The criteria of the respondent was a) a farmer who lived in the location of the study; b) a farmer who owned the land area of pepper less than 10 ha; and c) a farmer who had not implemented the warehouse receipt system. Questionnaire was employed as the data collection technique. Three enumerators were trained to collect data from respondent by interviewing them face-to-face with the Covid-19 health protocols.

The social network analysis on pepper farmer was conducted by using the socio-metric techniques towards farmer group as the analysis unit to view the social network amongst the members of farmer group. The data was processed by using UCINET 6 so that the result was illustrated by the sociogram.

3. RESULTS AND DISCUSSION *a*

The total number of actors in the analysis was 40 pepper farmers. However, the study was able to gain data from 37 respondents while the other three respondents provided the defective data. The analysis was broken into two steps: network structure analysis and group network analysis. The social network of pepper farmers was figured as below:

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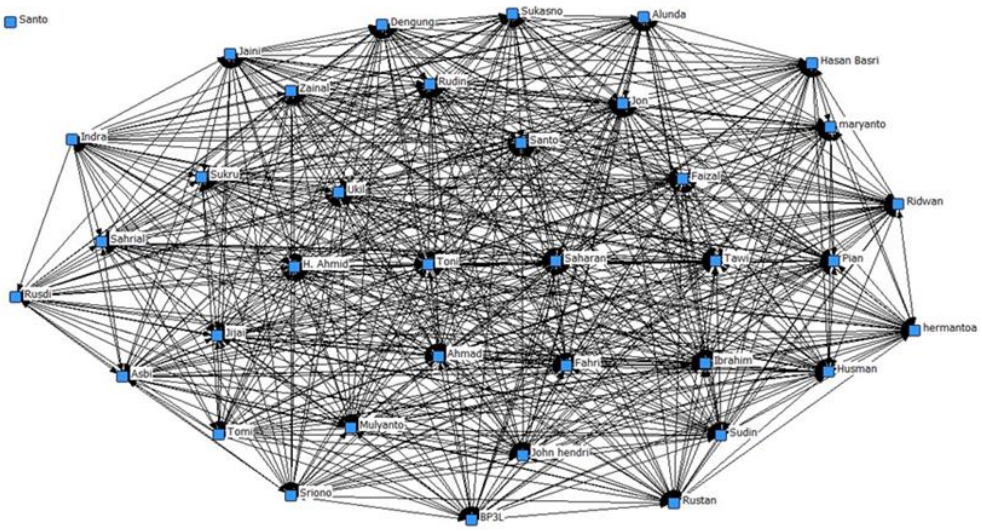

Figure 1. The Social Network of Pepper Farmers
Source: the processed primary data

The analysis was applied to measure the closeness amongst the actors in a particular community. The closer networking explained the better communication amongst the actors. The network analysis structure was measured by the diameter and distance.

The diameter was the total number of nodes amongst the actors that were inter-correlated. The diameter analysis measured the most counted nodes from each path on the group network. The distance was the average score of steps required by all actors to interact each other. The lesser distance indicated the tighter relationship amongst the actors in the social network structure.

Table 1. The Distance of the Farmers' Social Network

Frequency	Prop	Average	Standard Deviation
929	0.697	1.3	0.4
331	0.248		

Table 1 illustrated that the average distance was 1.3. It meant that each actor in the network were able to interact each other with one step on average. The finding described that the farmers in the study had a strong relationship in the farming activity. It was supported by Sulistiawati (Sulistiawati & P Lubis, 2015) that studied the social network analysis of group farmer in Bogor Indonesia. It stated that the relationship of farmers was determined by the individual characteristics and the level of closeness.

Furthermore, the group network analysis was applied to describe the interaction of small groups in the social network structure. The group network analysis was shown from the component and clique on all social networks.

Component was the collection of nodes that were inter-correlated and has the unbroken link. The number of components showed the total number of community that isolated each other in the social network. The study found that the social network of pepper farmer was at 0.97 component with 37 actors. It meant that almost all actors in the social network can interact each other directly or indirectly. There was no node that isolated each other in this social network.

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Another analysis was using clique. It showed the total number of group that was tighter than component analysis. Clique required that among the actors should have link. If one of actors had no link with the other actor, they were not called as a clique. The clique also described a small community that was familiar with the bigger community.

Centrality analysis was another analysis used in the study. It described which actor that was vital in the social network. The analysis was broken into two: out-degree and in-degree. Out-degree was the score that went out from one node to another while the in-degree was the score that came in from one node to another. The high score on in-degree meant that the node (actor) had high power in a particular network. In other words, the actor was the most influential actor in the social network. The level of centrality analysis found all the actors were almost equal as the centrality score with 35,000 occurred in almost each actor in the study. It indicated that every actor had equal level of interaction.

4. CONCLUSION

The study concludes that the social network of the pepper farmers has a strong relationship amongst the members in the society. Every actor in the network is able to interact each other as it shows the average score with 1.3. The component in the network is all nodes included in the network with total 37 actors. The level of centrality describes that almost all actors have the same score with 35,000. It indicates that almost all actors involved in the study have equal interaction. The strong social network on the pepper farmers is one of indicators on the strength of social capital of the society. The study implies that the people in the location of the study are able to be empowered economically and socially so that there are no more farmer left behind.

The study focuses on the southern part of Bangka Island. Future research should involve other regencies in the province as the location of the study such as Bangka Barat, Bangka Tengah, and Bangka. Future study should also consider the identification component of social network that contributes its role towards the local economic development through pepper farming activity in Bangka Belitung Island Province.

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