

The Sustainability of Tobacco Agribusiness in Temanggung District, Indonesia: The Perspective of Young-Adult Family Members of Farmers in Three Tobacco Center Villages

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Abstract

Tobacco agribusiness has contributed immensely to the economic, social, and cultural lives of the community of Temanggung district. The tobacco industry faces various challenges, such as government regulations regarding its health concerns, poor climatic conditions, decreasing agricultural land, price fluctuation of crops, and ageing farmers. However, the sustainability of tobacco agribusiness in Temanggung district still maintained by continuing their tradition, but threatened in the future by lack of farmers' regeneration. This research is aimed at exploring and analysing the transmission of traditional knowledge in the framework of tobacco agribusiness sustainability from the perspective of young-adult family members of tobacco farmers. The focus is on: (1) aspects of social-culture and environment in the transmission of knowledge process; (2) the method of transmission of knowledge from older generation farmers; (3) the opinions of younger generation farmers in the transmission of knowledge process for the future; and (4) the role of younger generation in the transmission of knowledge. This study employed a qualitative case studies approach. Data for this research was acquired through literature review, direct observation, interview, and focus group discussions. A field study was conducted at three villages located in Temanggung district. Results indicated disparities in the level of optimism among young-adult family members of tobacco farmers towards the future of tobacco agribusiness. The high optimism among the young generation is one of the supporting factors of transmission and sustainability of traditional knowledge. This study also found important role of communications as additional points for Transactional Model proposed by Sameroff.

Keywords: sustainability, knowledge transmission, traditional knowledge, young-adult farmers, tobacco

1. Introduction

The population of Temanggung district depend primarily on tobacco plant for their economic survival. Statistics showed there were 6,801 agriculture and tobacco trading companies while 25,724 businesses not related to this sector in Temanggung district (Basjir et al., 2010). In 2015, the area planted with tobacco totalled 18,428 hectare or about 59.15% of the total agricultural land in Temanggung (BAPPEDA Kabupaten Temanggung, 2016).

Tobacco planting as a commodity has been a tradition since 16th century (Budiman & Onghokham, 2016; Laily, 2016; Mitchell, 2014). Art and cultural events has also been inspired by tobacco plant.

In Temanggung, the Voor-Oogst (VO) species, which requires minimum water supply, is grown (Djajadi, 2015). It depends on tadah hujan (rainfed system) and the plants survive well during the dry season and therefore, farmers depend on them for their livelihood.

In some areas, farmers cultivate coffee tree in tobacco farms to prevent soil erosion. The coffee tree (*Coffea arabica*) has been cultivated since 2010. Coffee provides additional income for tobacco farmers while ensuring sustainable productivity and the environment.

Tobacco agribusiness plays an important role in four aspects of community life in Temanggung: economy,

social-culture, local wisdom, and sustainability of living environment. Traditional knowledge system or commonly known as Traditional Ecological Knowledge (TEK) is a method of passing information by older generation farmers to the younger ones (Berkes, 1993; Cristancho & Vining, 2009). The TEK is defined as cumulative knowledge, believe, and daily life practice developed through adaptive process and inherited from generation to generation through cultural transmission. It is essentially about the relationship between living beings and the environment (Berkes et al., 2000).

Earlier studies have focused on the disappearance of traditional knowledge and its impact on indigenous groups and the rural community (Gómez-Baggethun and Reyes-García, 2013). Individuals in the community must collaborate to preserve traditional knowledge (Haryadi et al., 2016). Additionally, there has to be collaboration between the community which own traditional knowledge and the outsiders (Popova, 2014).

In recent years, tobacco agribusiness has faced challenges, such as health warnings related to tobacco consumption, less-than-ideal climatic conditions, and unstable tobacco price. Another threat faced by the tobacco agribusiness is the decline in the number of its farmers and the ageing farmers. Statistics indicate a decline of 3.10% in the farming population between 2014 and 2015 (Kementerian Pertanian Republik Indonesia, 2016), while the average age of farmers is above 45 years accounting for 60.8% of the total farming population (Badan Pusat Statistik, 2013). This is coupled by the fact the younger generation is not keen to pursue agricultural farming as a profession.

The focus of this research is to analyse the intention of the young generation to explore tobacco agribusiness and transmission of related knowledge from older generation to the younger farming population in three different villages in Temanggung district. The following will be examined in this context: (1) sociocultural and environmental aspects as the setting in the transmission of knowledge process; (2) the method of traditional knowledge transmission of tobacco agribusiness by the older generation; (3) the opinions of young generation regarding the transmission process of traditional knowledge; and (4) the opinion of younger generation regarding their role in preserving traditional knowledge of tobacco agribusiness for the future.

2. Method

A qualitative case study research approach was adopted in this study and literature review was an additional source of data for this study.

Informants were selected through purposive and snowball sampling method (Creswell, 2007; Leavy, 2017) while more in-depth data was acquired through focus group discussion, direct observation, and interview (Ciesielska et al., 2018; Lune & Berg, 2017). Direct observation method was also adopted focusing on tobacco producers at Legoksari Village in Tlogomulyo sub-district, Tlahab Village in Kledung sub-district, and Kedu Village in Kedu sub-district (see Figure 1). Focus group discussion was held with 24 unmarried members of tobacco farmer families aged between 18 and 30 years. The interview was conducted with 16 local leaders, cultural figures, and older generation farmers.

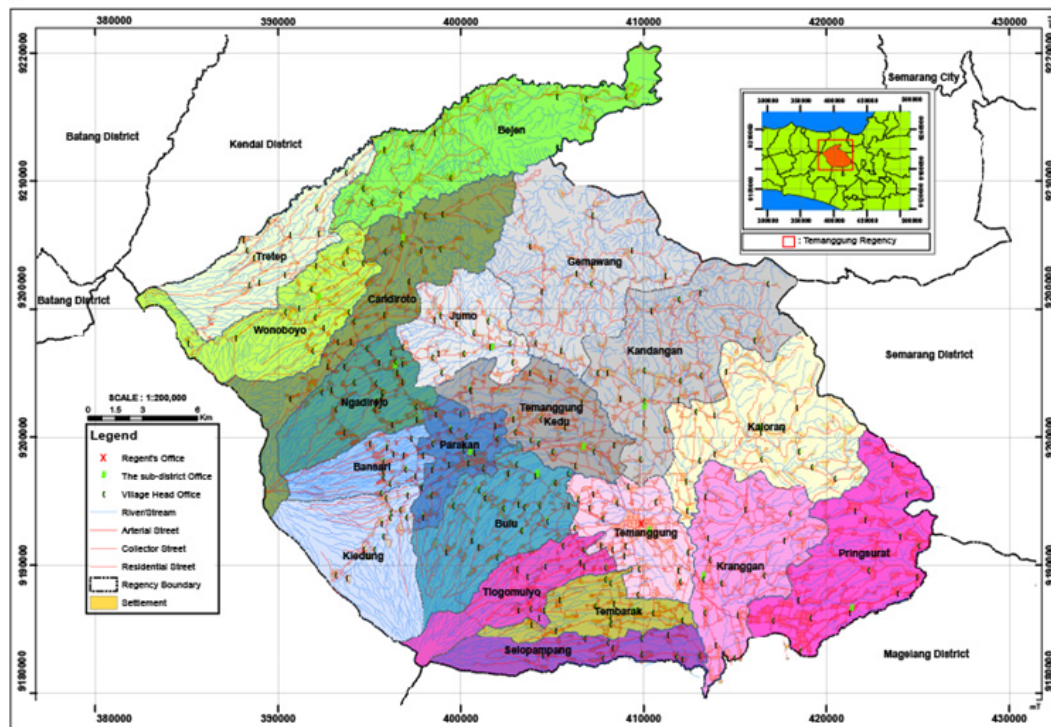


Figure 1. The map of Temanggung District, Central Java, Indonesia

3. Results

Agricultural environment, tobacco culture, and economic character play a role in influencing the perspective of younger generation in considering farming as their occupation.

3.1 Agricultural Environment

Based on observation and interview results, there are two types of tobacco agricultural land in Temanggung, namely *ladang* and *sawah*. *Ladang* is the name of farming area in highland which uses rainfed system due to the unavailability of irrigation system. The characteristics of soil with low water content, unstable land contour, and vulnerable to erosion mean the tobacco plants require intensive care and fertilisation. This leads to high cost in terms of maintenance.

In the *ladang*, during the rainy season, some plants can be planted, such as corn, garlic, onion, and chili. However, during the dry season, almost no plants could be grown, especially tobacco.

Sawah is a farming area which relies on irrigation system from the river. The contours of wetland tend to be soft and contain a lot of water, ideal for tobacco planting. Tobacco farmers do not usually spend on fertilisers as there are already fertilisers in the same area which were used to plant other crops. Labour wages account for the biggest expense.

During the dry season, various plants are planted in the *sawah* facilitated by the irrigation system. Farmers choose to plant tobacco as it is relatively easy to maintain and a good source of income. The tobacco planted in *sawah* does not require special treatment, unlike chill or broccoli, and provides two to three times higher yields, compared with paddy or corn.

There is a difference in the quality of tobacco from *ladang* and tobacco from *sawah*. In general, the quality of tobacco produced in *sawah* is Grade A (lowest quality) to Grade D (medium quality). The price of *sawah* dried-chopped tobacco can fetch up to IDR70,000.00 (USD5.05) per kilogramme. However, the quality of tobacco in *ladang* could reach Grade H (high quality) with an average price between IDR150,000.00 (USD10.40) and IDR500,000.00 (USD36.07) per kilogramme.

The farmers of Legoksari village and Tlahab village who live in the mountain slopes of Sumbing and Sindoro are implementing the *ladang* agriculture system, while the farmers in Kedu Village who live in the lowland are

implementing the *sawah* agriculture system. The majority of tobacco farmers in the highland are better off economically compared with the lowland farmers. For example, farmers in Legoksari and Tlahab have their own land, while the farmers in Kedu are the farmers rent from their landlord (rentier).

About 98% of Legoksari villagers depend on agriculture as their primary source of livelihood. Almost no locals work or stay outside of the village, unless they are married to outsiders. In Tlahab Village, 25% of the locals work in the service and tourism sectors. In Kedu Village, 50% of its residents are engaged in the agricultural sector.

3.2 Tobacco Culture

Each village studied here has its own unique cultural characteristics. In Kedu, there is a cultural activity to celebrate tobacco farming, namely *Grebeg Makukuhan*. This festival is held before Ramadhan to commemorate Ki Ageng Makukuhan who was the first person to introduce the tobacco plant in Temanggung. This festival is part of the funfair or travelling carnival known colloquially as “pasar malam” and lasts for a month. It ends by marking the death ceremony of Ki Ageng Makukuhan with a special puppet show and a carnival. However, not all the events are related to tobacco, such as the carnival. The farmers in Kedu village used to perform a personalised ritual before they plant tobacco though it is no longer practised.

In Tlahab village, a cultural event called *Sadranan* is organised annually postharvest. The highlight of *Sadranan* is the ceremony conducted in spring at Sidandang river as one of the main water resources in Tlahab village. The ceremony is conducted in the morning with a prayer led by religious leaders and ends with a communal meal. The food is cooked at home and brought to the festival in a container called *tenong*. It is similar to potluck gathering and the food is blessed by the religious leader. The *Sadranan* activity also includes a puppet show for three days and two nights.

Some farmers in Tlahab village perform the ritual on their own by serving the food on a banana leaf, called *takir*, and placing it at each corner of the land that will be planted with tobacco. This ritual offering, conducted by older generation farmers, is a form of respect for the land.

In Legoksari village, cultural activities related to the tobacco agribusiness are held almost every month. Each stage of tobacco production has its own cultural ritual performed personally or collectively. Annually, there are at least eight cultural rituals performed collectively, and many performed personally. The liveliest cultural ritual is *Among Tebal* which is performed at the start of tobacco cultivation. The main event is a prayer followed by having *tumpeng* together. *Tumpeng* is rice shaped in the form of a mountain with various colours, such as red rice, black rice, glutinous rice and others. The *tumpeng* is also filled with various side dishes in addition to vegetables.

The architecture of the houses in Legoksari also reflects the culture of tobacco farming. The layout and structure are to facilitate production of tobacco. Their houses are built in tiers, and the second tier is used to dry the tobacco. There is also a tobacco storage area.

3.3 Economic Characteristics

The young adult family members of tobacco farmers were asked about their dreams during the focus group discussions. The participants from Legoksari Village expressed desire to continue the work of the older generation as it is profitable. In addition, they have no other skills.

The tobacco products from Legoksari are known to be of high quality. The people of Temanggung called it *Lamuk* tobacco. Legoksari Village also produces *Srinthil* tobacco which has a high level of nicotine and fragrance. *Srinthil* tobacco is the most expensive product. The good image of tobacco agribusiness means the farmers have good bargaining power with the merchants. The products are collected by the merchant. Some tobacco agribusiness centres have to market or distribute their harvested products. Merchants compete with each other to obtain tobacco products from Legoksari.

Most of the participants of focus group discussion in Tlahab village decided to become farmers because they only have middle school qualifications. The own their land and do not share their yields. Those who have higher education have no intention to become farmers and prefer an office-based job.

Tobacco contributes to the coffers of Tlahab, and most of the farmer starts to switched to coffee planting. Known as *Posong* coffee, the quality of this coffee is satisfactory, and it has won awards from abroad. Besides coffee, the economy of Tlahab village is also supported by tourism. Road infrastructure is good and farmers here have access to information and livelihood aside from agriculture.

No participants at Kedu Village want to become farmers though their families are live on incomes earned from agricultural activities. Tobacco farms in Kedu only contribute minimally to the economy of the village. Most of

the residents work in the service sector. Those involved in farming manage the land owned by others, or use a rentier system. Since this village is a sub-district of the capital and it is only four kilometres from the capital of district, it has easy accessibility and opens up wider opportunities for employment in the city.

The economic contribution of *sawah* tobacco in Kedu village is lower compared with the other two villages which have implemented the *ladang* farming system. The soil in Kedu village is not as good as that of the other villages, namely Tlahab and Legoksari. The quality of tobacco is also ordinary, and therefore, the farmers prefer to sell their yields in the form of leaves, not as a dried-chopped tobacco. The sale of tobacco yield in the form of leaves has been good for the farmers of Kedu Village primarily because they do not have to bear the high post-harvest manufacturing cost and second, they could sell the yields to tobacco-chopper farmers. Therefore, it reduces the risk of price manipulation by merchants.

3.4 Opinion of Young Generation

Farmers in these three areas complained of never receiving any assistance from related government institutions to promote their tobacco agribusiness. This could be due to known health hazards of tobacco consumption which meant the state was limiting the growth of tobacco and cigarette industry. It however, continues to help horticulture or food crops. Therefore, tobacco farmers depend on each other and traditional knowledge regarding tobacco agribusiness is passed through generations.

The minimal involvement of government in this industry mean the farmers are the main actors in the knowledge transmission of tobacco agribusiness. This was evident in the three research locations. Active transmission of knowledge by the older generation meant the young generation become interested to pursue opportunity in agricultural sector.

A young woman from a family of tobacco farmers in Tlahab who works as a teacher in a private *madrasah* (religious school) recounted her daily schedule which starts with Quran recital in mosque after the Fajr prayer. It ends at 6.00 am. After returning from mosque, she cleans the house and dries the chopped tobacco and at 9.30 am, she flips the tobacco for maximum sunlight exposure. Between 1.00 pm and 4.30 pm, she teaches at the *madrasah*, after which she returns home to mince the tobacco leaves. After Maghrib prayers, she helps her family in the final production process. This usually takes hours and sometimes she finishes only in the early hours of the morning.

It is clear the production process, which takes two months, is tiring and time consuming and does not attract the younger generation who prefer to work regular hours at the factories or the services sector. The younger family members who are involved in the production process hardly have the time to mingle with their friends as they are aware their livelihood depends on tobacco farming.

In Legoksari, the transmission of knowledge regarding tobacco agribusiness begins in childhood. In addition to participating in cultural activities conducted in collective and intensive manner, the children of farmer families are roped in to help with tobacco production. The chopped tobacco is dried to cool off in the open attic. The adults will stay overnight to ensure the rain does not affect the drying leaves while the youngers catch up with their sleep. The tobacco is ready to be folded and packed when the dew, which chill and moisten the tobacco, emerges.

The young-adult family members of tobacco farmers in Legoksari also feel exhausted and bored during the tobacco harvesting season. Their only consolation is expectation regarding the tobacco yield. Big events are planned post-harvesting, such as wedding ceremony, circumcision and cultural activities at village level.

The young family members of tobacco farmers in Kedu village who were interviewed in this study had minimal exposure to the agriculture sector. Their involvement is limited to delivering food to the farmers during their break time. Most of them did not even know the location of their farms.

The youth involvement is peripheral because most of the land is not owned by the family. There is no certainty of the rented land and therefore the older generation farmers encourage their children to focus on their education so they can pursue a career outside of farming.

Therefore, many young-adult family members of tobacco farmers in Kedu Village have expressed their desire to leave the agriculture sector. Most of them want to move to the city, work in timber factories located near their village, or become traders. Agricultural sector is deemed incompatible with the lifestyle of the younger generation because they have to work under the punishing sun and it is also involves 'getting dirty'. 'Clean' jobs (being in an office environment and not using manual labour or physical strength) are favoured by the young generation although their incomes are sometimes lower compared with those working in the agriculture sector.

4. Discussion

In general, the concern is gradual extinction of traditional knowledge among indigenous group and rural community. According to Maffi and Woodley (2010), the loss of traditional knowledge and value system is a global one. We need alternative community-based solution in overcoming social and environmental issues.

Cristancho and Vining (2009) examined threats that have the potential to erase traditional knowledge, including the disappearance of traditional land, cultural assimilation, climate change, destruction of ecosystem, in and out migration, poverty, urbanisation, and deaths of indigenous leader. The threat towards the continuance of traditional knowledge are (Tang and Gavin, 2016): the disappearance of transmission path of traditional knowledge, the change of practice of traditional livelihood, the change of traditional religion and beliefs, the change of environment and natural resources, and the loss of traditional rights and traditional institution.

In the present study, the less successful transmission of traditional knowledge of tobacco agribusiness has resulted in low level of optimism among the younger generation. The low optimism level among younger generation of tobacco farmer families towards the future of agriculture is related to their low dependency on tobacco farming as economic lifeline, insufficient cultural event to promote transfer of traditional knowledge, and non-ownership of land or dependency on a rentier system (see Table 1).

Table 1. Optimism level of younger generation tobacco farmers in Kedu, Legoksari and Tlahab

Villages		Kedu	Legoksari	Tlahab
1	Number of Farmers	Low	High	High
2	Tobacco Culture	Few	Many	Moderate
3	Tobacco Economy	Low	High	Moderate
4	Transfer of Knowledge	Personal	Collective and personal	Collective
5	Agricultural land	Sawah	Ladang	Ladang
6	Land Ownership	Rent	Self-owned	Rent and self-owned
7	Opinions towards Agriculture	Pessimist	Optimist	Optimist and pessimist

The sustainability of community life in rural area depends on the optimism of young generation of the farmer's family. Those who are optimistic about the future of the agricultural sector will tend to choose to live in the village. Therefore, in the long term, they are expected to contribute to the development of their village. Johnson et al. (2005) reported among younger generation Indonesians, selecting a place to live is related to local job opportunities, educational expectations, and social ties. The finding is consistent with that of present research. The younger generation tended to live near places which provide job opportunities rather than live near their family where there are no job prospects.

Cristancho and Vining (2009) based their study on the model of Developmental Niche (DN) which see the human development in the context of four related components: (a) 'Setting', which includes environmental aspects; (b) 'Customs', as the part of sociocultural aspects; (c) 'Child's psychology'; and (d) 'Teacher's psychology'.

The DN model situated the transmission of traditional knowledge as part of socialisation process which involves intentional transfer of values, knowledge, and skills. It involves strategy in teaching and learning process to ensure human adaptive behaviour for the sake of their life continuity. However, most of ethnographers do not discuss the method of traditional knowledge transmission regarding specific skills. According to Ruddle (1993), the transfer of traditional knowledge is performed through non-organised, unstructured, and very typical methods.

The present research found a strategy in terms of transfer of traditional knowledge when family members support tobacco agribusiness. The family members are engaged in *amek* (plucking), *natani* (arranging and rolling the leaves), *ngimbu* (ripening), *ngrajang* (chopping), *manaske* (drying), *nggulungi* (managing the dried result), and *ngemot* (packing). Each activity is labour-intensive involving all the family members as well as some hired hand. However, the involvement of family in the post-harvesting activities of tobacco processing is not only a strategy for traditional knowledge transmission, it also saves cost.

The decision and perspective of farmers are often made based on several considerations in reference to the risk

projection of their farms. Grunbuhel and Williams (2016) who focused on East Indonesia reported small-scale farmers are reluctant in accepting innovations. They tend to be selective in enforcing changes on the agriculture system, accepting only if those changes do not affect their livelihood strategy. The involvement of family in tobacco agribusiness to save cost is in contrast with the form of transmission strategy explained by the model of DN. Additionally, customs and ceremonies held by tobacco farmers are a form of gratitude towards God rather than as a strategy of traditional knowledge transmission.

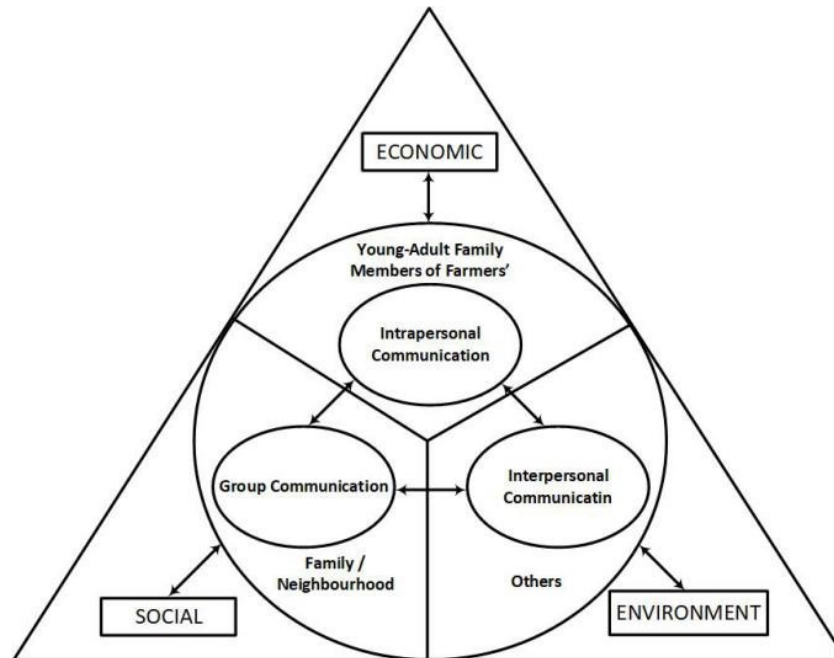


Figure 2. The scheme of continuous interaction in traditional knowledge transmission/transfer

Transactional model proposed by Sameroff (Kuczynski and Parkin, 2007) is compatible with the farmers' perspective on traditional knowledge transmission. According to this model, social development is a product of continuous interaction between children and their family environment. Social development occurs not as the result of a behaviour or a certain cognition but due to dialectic transformation which occurs continuously as a response towards new characteristics of each family member. This transformation also happens in the larger community.

Continuous interactions between young generation of farmer family and the other family members or the member of community occur through various communication processes (see Figure 2) and without any dominant party. This is consistent with the findings of Ziemann (2011), who showed traditional farming system has a good balance of ecology, economic and social life.

5. Conclusion

Agricultural environment, tobacco culture, and economic character play role in influencing the level of optimism of younger generations and their perspective in considering farming as their occupation. The high optimism among the young generation regarding the future of traditional knowledge in their lives is one of the success indicators of transmission and sustainability of traditional knowledge. The present research also found a strategy in terms of transmission of traditional knowledge with the family members' communication and support in each tobacco agribusiness process.

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