

PRINCIPAL-AGENT RELATIONSHIP IN SMALL-SCALE GOLD MINING

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ABSTRACT: *This work is the result of research on small-scale gold mining in Tatelu village, Northern Minahasa District, North Sulawesi Province, Indonesia. The objective of the study was to find out how the principal-agent relationship between the funders and miners in traditional gold mining and to show the difference in the principle-agent relationships in the mine with those theorized in economics. The results show that social networking is very important in the process of finding and recruiting miners because through the social network the donors get information about the quality of miners. The results also indicate that both the funders and the miners do not always pursue their own interests to the maximum so that no party is harmed. There is commitment and reciprocity from both sides to support each other. This can happen because mine work may pose a risk to the safety of miners and the failure to obtain enough gold to pay the miners and provide benefits to the funder. The research used qualitative research method and conducted in September-October 2017.*

KEYWORDS: Principal-Agent, Reciprocity-Commitment, Small-Scale Gold Mining, Social Network

INTRODUCTION

Now small-scale gold mining is conducted in 70 countries involving 10-20 million miners (Keane and Bernaudat, 2013) and feeds nearly 150 million people whose lives depend on these mining activities (SDC, 2011). Most small-scale gold mining (SSGM) exists in countries in Africa, Asia and Latin America. SSGM is usually located in remote areas far from the reach of government apparatus. For communities around the mining, SSGM are also an alternative source of better income for farmers, fishermen or poor villagers. Although usually located in remote areas, usually the mining becomes the destination of migrants at home and abroad. In Suriname, for example, there are miners from Brazil (Versol, 2007), while in Mali miners came from Ghana and Burkina Faso. (Coulibaly, 2017). A lot of research has been done on SSGM. Funoch and Astuti studied impact of SSGM on local livelihoods in Kameron and Indonesia (Funoch, 2011; Astuti, 2015), Teklemariam studied the role of SSGM in the sustainable livelihood for rural communities in Eritrea (Teklemariam, 2015), Tenkorang studied the impact of SSGM on local farming in Ghana (Tenkorang, 2015), Coulibaly studied social organization of SSGM in Mali (Coulibaly, 2017).

SSGM often appear chaotic because they are usually located in remote areas and are generally regarded as common resources. In fact, SSGM also indicate the existence of social organizations with the norms that govern them. From the standpoint of economic sociology, it is unlikely that economic activity, like SSGM, can proceed without conventions or norms mutually agreed (Biggart, 2003; Fligstein, 2007).

This work is the result of research in SSGM in Tatelu Village, North Minahasa District, Indonesia. This study aims to (1) look at the principal-agent relationship between funders and miners and (2) show how the principle-agent relationship in SSGM is different from those

theorized in economics. The results of research indicate that social networks are important as a means of getting miners because the network can help address the problem of information asymmetry. This can happen because work is at risk for the safety of miners and failure to provide sufficient results to pay the miners and the benefits to the funder.

CONCEPTUAL FRAMEWORK

The principle-agent relationship takes place in many relationships between people. The principal-agent relationship (P-A) arises when the first party (principle) authorizes the second party to act in the interest of the first party (agent). The P-A relationship exists in many relationships between the service provider and its clients, between the patient (principle) and the doctor (agent), between the card provider (the agent) and the user (principle); between the employer (principle) and the miner (agent); between the electorate (principle) and the representative of the people (agents), between bureaucrats (agents) and politicians (principles), etc. The study of P-A relationships began in economics (Jensen and Meckling, 1976). The origins of P-A theory in sociology are in Weber's writings on bureaucracy (1976). The P-A theory then extends in other areas such as health, politics, public policy, state administration, education, and stewardship.

There are several key elements in the P-A relationship. First, agents are different types. There are diligent and lazy agents, there are skilled and unskilled agents, and there are honest and dishonest agents. Second, agent action affects the desired outcome by principle. Third, there are random factors beyond the agent's ability to control it but affect the outcome of the agent's actions. Fourthly, there are results that are the result of agent action. And fifth, there is information asymmetry (Petersen, 1993). Like the assumption in neoclassical economics, there are two assumptions about human nature in the P-A relationships advanced in economics. In accordance with Williamson's view, P-A theory holds that actors act very rationally. Actors are considered to have a lot of information so that rational decisions can be made quickly. Actors in principle-agent theory act in their own interests in ways that harm the interests of other actors. This is also in line with Williamson's view of the economic cost of transactions that actors tend to be opportunistic – self-interest seeking with guile (Williamson, 1985).

The P-A relationship is closely related to the problem of agent selection, monitoring and rewarding to agents. The P-A theory analysis unit is the contract that governs the P-A relationship. The concern of P-A theory is to determine the most efficient contract governing the P-A relationship (Eisenhardt, 1989). Specifically, agency theory focuses on ways in which principals choose the types of agents and forms of agency action monitoring, how the types and numbers of positive and negative sanctions on agents (Kiser 1999: 146).

Because of these assumptions about human nature, P-A theory deals with solving two problems that occur in P-A relationships. The first problem arises when the desires or objectives of the principle and the agent are contradictory, and it is difficult for the principle to verify what the agent does. The second problem is the problem of dividing the risks that arise when the principles and agents have different attitudes toward risk. The problem is the principle and the agent chooses different actions because of different risk options. Based on these five concepts, agency problems, and human nature arises a number of propositions. For example, when a contract is based on the result of an agent's action the agent will act in the best interest of the principle. A lazy or unskilled agent will choose a contract with a fixed wage, whether daily or

monthly. If the principle can monitor agent actions then the agent will act in accordance with the interests of the principle. There are a number of other propositions that can be made on the basis of the concept and human nature.

There is criticism of P-A relationship theory. P-A relationship theory is considered inclined to ignore the context in which the P-A relationship occurs. Perrow says that P-A theory does not put the P-A relationship in the context of behavior realistically and based on self-assumed self-assumptions that it considers too narrow (Perrow, 1990). The P-A theory that emphasizes unlimited personal gain brings agents to opportunistic behavior reflects a tradition in research based on P-A relations, particularly neoclassical economics research with too simple assumptions. Wiseman advocates disposing of these assumptions in cross-institutional research. By disposing of that assumption Wiseman says that agency theory is an important analytical tool for analyzing any delegation situations that are free from a particular institutional context. The narrow assumptions need to be replaced with more flexible and broad assumptions because the parties in the P-A relationship may always hold conflicting views of desired goals and the relationship of means and objectives, potentially resulting in agency actions contrary to the wishes of the principal. In this way convergence and divergence of interests are dynamic processes because both parties can agree or disagree on the main issues on different things in their relationships. By loosening the egoistic notion of self-interest found in economic models and arguing that both agents and principals have socially sourced interests that can or do not correspond to, and do not necessarily reflect, the maximization of wealth. Therefore, the P-A relationship theory only needs to understand the potential for differentiated interests between agents and principles (Wiseman, 2011:204).

On the basis of these considerations, Wiseman proposed a social theory of the P-A relationship by accepting a core understanding in sociology that economic behavior is shaped by social mechanisms not only on the peripheral aspects but also in essence. The mechanism affects the conventions that define the various roles we occupy and how we interact with each other. These social mechanisms are institutions, cognitions, power networks. The whole mechanism constitutes an institutional context (Wiseman, 2011: 206). Kiser also did the same criticism as Wiseman on agency theory. Kiser also proposed that the institutional context should be considered in explaining the P-A relationship (1999).

P-A theory bases itself on principles of scientific management and is not applied to certain fields as in the knowledge economy. Mitchell says in principle-knowledge worker relationships, the principal depend on the specialized knowledge of their agents to assess situations critically and to apply their skills in a manner that serve the interests of the principal manager. Since knowledge workers possess the specialized knowledge required to solve problems and make informed decisions, manager have both a dependency on their knowledge worker employees and an expatiation that these knowledge workers will undertake the rigorous analysis necessary to make appropriate decisions on complex matters. In this agency relationship, the problem of information asymmetry is amplified by imperfect distribution of knowledge, termed knowledge asymmetry (Mitchell, 2011:152). However, according to Mitchell, knowledge workers as professionals will tend to take action that benefits the principal, himself and the organization because of the pressure of professional ethics and the tendency of professionals to develop them (Mitchell, 2011:155). According to Mitchell it allows for models of control based on reciprocity and commitment (Mitchell, 2011:1). With different arguments the views of Mitchell fit the views of Granovetter and Coleman. The agent-principle relationship can last relatively long and personal. Granovetter suggests that the

networking relationships between individuals in economic transactions, such as principal-agents, over the network will encourage each side to be trusted (Granovetter, 1985). Dense network connections involving many people where all parties can monitor the actions of individual network members will encourage reciprocity (Coleman, 1988). This indicates that each party in the P-A relationship will avoid maximizing its own interests.

This paper bases itself on the critique of the P-A theory mentioned above, namely that the P-A theory needs to loosen its assumptions about human nature and the need to pay attention to the context in which agency relations occur. The P-A relationship in SSGM takes place in a cluster consisting of many mining pits and gold processing sites whose activities involve many miners and funders. Social networks help to overcome information asymmetry in the recruitment of miners. Relatively long personal social relationships and the uncertainty of mining results allow for commitment and reciprocity between funder and miner.

METHODOLOGY

This research is done by qualitative research method. The study was conducted from September to October 2017 in the traditional gold mining area of Tatelu Village, Dimembe Sub district, North Minahasa Regency, North Sulawesi Province. Research is done by interview and observation. Interviews were conducted with 20 funders and 2 miners. In addition, interviews were conducted with a cooperative management board, Village Secretary, and Village Head. Most of the interviews were conducted in gold processing factories. Interviews were conducted with funders who have run their business since the beginning of mining activities in 1998 and the real-time funding is still new. For informants to be more representative of all tribal groups, interviews with funders were made with the Minahasa, Sangihe-Talaud and Bolaang-Mongondow funders. Observations were made to see how the completeness and magnitude of the equipment or gold processing machine can describe the status of the funders and the pits in which miners do the work.

RESULT/FINDINGS

Context

North Sulawesi is one of the provinces in Indonesia that has enough gold reserves. Gold mining reserves are located in South Minahasa District, North Minahasa, South Minahasa, North Bolaang-Mongondow, East Bolaang-Mongondow, South Bolaang-Mongondow, and Bolaang-Mongondow. Up to now there are 50 companies holding IUP (Mining Business License). Now there are companies that already operate North Minahasa and Bolaang-Mongondow. The company obtained a work contract from the Indonesian government. In addition to mining by large companies with modern equipment there are also SSGM both legal and illegal. Illegal mining is conducted on state-owned land and private land. It is said illegal because the traditional miners have no mining permits. The lack of state control over illegal mining has resulted in conflict over pit mining conquests. They assume that everyone has the right to mine.

The North Minahasa region, like other areas in the Minahasa region, is a hilly area covered with coconut, clove, vanilla, nutmeg, and tropical fruits. Because of the fertile land of the Minahasa region, most of the population works as farmers. Tatelu is one of the villages in

Dimembe Subdistrict, North Minahasa District, North Sulawesi Province. The lands of Tatelu are private property of the community. Tatelu is an area located on the slopes of Mount Kelabat. Most Tatelu people work as farmers. Few of them work in the formal sector such as civil servants, traders, and factory workers. SSGM activities began in 1998 after mining operations by private companies from Australia were not implemented. The gold mine in Tatelu is located in the hilly area just behind the villagers' settlement. SSGM in Tatelu has received permission from the government.

In SSGM of Tatelu there are actors such as funders, owners of gold processing factory, landowners, and miners. Funder is a person who performs mining by employing miners. The landowner rents his land for mining by the funder and to the owner of the gold processing factory. There are also some landowners who also become the funder and owner of a gold processing factory. Successful funders usually also set up gold processing factory. Most of the funders, landowners and owners of gold processing factory are Tatelu peoples. From the economic side, landowners who own factory and also become funders occupy the highest position. Then the middle position is occupied by the funder who also owns the factory. Low position is occupied by the funder, and the lowest is the miners. At this time the funder who occupies the highest position is a funder who came from outside the village Tatelu. This is a Chinese who originally worked as a miner. Because of his experience in mining and his success in raising capital ultimately became the largest funder in Tatelu and has modern mining equipment and gold processing factory.

Miners in Tatelu consist of several tribal groups, such as Minahasa, Sangihe-Talaud, Bolaang-Mongondow, and Sunda. The Minahasa tribe comes from the Minahasa area, the Sangihe-Talaud tribe comes from the Sangihe-Talaud Islands, and the Sunda tribe comes from Province of West Java. In Tatelu miners live in peoples' homes or in huts around the pit. Sundanese and Bolaang-Mongondow miners are usually Muslim; Minahasa and Sangihe-Talaud are usually Christian.

The number of miners in Tatelu between 1998 and 2010 was more than 3,000. Then in 2013 the number of miners reduced to 1500 people. At this time the number of miners is about 750 people. The decline in the number of miners is closely related to the deeper pits. At present there are 150 operating pits. The number of ball mills as many as 70 pieces with the separator 50 pieces. At this time the funders, land owners and owners of gold processing factory in total about 50 people. The amount is recorded as a member of Batu Emas Cooperative. There are still some funders who because they do not continuously mine so do not register themselves as members of the cooperative. The number of funders and miners has decreased considerably when compared to the beginning of mining. This happens because the pit is deeper in order to get the gold so that only funder with a large capital who can survive.

Recruitment through Social Networks

Working activities at SSGM Tatelu enable the formation of social networks involving miners, funders, owners of gold processing factory, and landowners. Besides based on similarity of work, the network is also based on the similarity of tribe, regional origin, and religion. The existing social networks are intertwining so that one miner can become a member of several networks at once, as well as the funder. Bonds on the basis of tribal and regional similarities of miners are very powerful because they have customs, language dialects, and habits.

In Tatelu the miners work on the funders. Funders are a person who does mining by employing miners. In relation to P-A relationships, these social networks facilitate the process of getting miners and contracting between miners and funders. If the funders have difficulty getting the miners, they can ask the help of the miners to find other miners who are looking for work. Usually the miners are asked for help will find friends or acquaintances that are considered to have the ability to mine, reliable and responsible. The miners can contact his unemployed friend in his home village, for example in Bolaang-Mongondow or in South Minahasa. They can also contact their friends who work in mining in other areas. If an agreement has been reached between the funder and the miner then the miner will soon be working.

Mining does not require the knowledge and skills acquired through training in schools. Expertise in mining can be obtained by anybody through direct practice (tacit knowledge/practical knowledge). By way of direct practice in the end the miners will gain knowledge and expertise in mining. They become skilled in mining and selecting rocks containing gold (gold ore) in the pit. Funders do not know whether miners can work well or not because there are no certificates that explain the miners' knowledge and expertise. Only with the help of miners or other funders a person can decide to employ miners. Therefore, the role of network becomes important in getting miners. Social networks play a role in reducing the negative effects of information asymmetry. By becoming members of the network, miners exchanged information, as did the funders. The miners can exchange information about where the good funders and where the donors are not good. Bad funders are funders who are too detrimental to miners. Conversely, the funders can also judge which miners are good and which are not good. Good miners are miners who can work quickly, produce gold ore, and do not perform actions that harm the funder.

Usually the miners working in the pit form a working group of between 4 and 8 members. Mining works takes place 24 hours a day. Each group is divided into two shifts, one group works at night and one group works during the day. In one mining pit can consist of several groups that grouping by tribe. Therefore, in one pit owned by one funder may consist of 2 or 3 tribal groups. The grouping of miners is also understood by the funders. Funders usually do not intervene in the formation of miners' work. The funders hand over to the miners to choose who will be their members and who the chairman is. The formation of groups on the basis of this tribe can prevent conflict due to misunderstandings. Misunderstanding can happen because tribal groups have different languages and behavior patterns.

A strong funder network is a network among Minahasa funders. The network is strong not only because its members are a tribe but also because they live in one village or adjacent to the mining area. In general, Minahasa funders are Christian. Therefore they also often participate in the same religious activities, both on Sunday worship in church and in religious activities that are held alternately regularly once a week from house to house. Minahasa funders also form rotating savings and credit association (ROSCA) whose activities are carried out once a month. Not all Minahasa funders are members of the ROSCA. Nonetheless, the funders who are not members of the ROSCA also know the funders who are members of the ROSCA.

In Tatelu usually the Minahasa funders employ miners from Minahasa, Bolaang-Mongondow, Sangihe Talaud, and Sunda (West Java). Similarly, Chinese funders. Unlike Minahasa funders, Bolaang-Mongondow funders usually employ miners from Bolaang-Mongondow and Sangihe-Talaud and Sangihe-Talaud funders employ miners from Sangihe Talaud and Bolaang-Mongondow. Minahasa usually employ miners from all tribal groups. This happens because Minahasa miners are not willing to mine in a very deep pit. Minahasa funder will face miner

shortages if they have to employ Minahasa miners only. In addition, the Minahasa funders are socially and politically stronger than the donors of other tribes because the Tatelu mining area is in the Minahasa region. Because of its strong position the miners are reluctant to take actions that could harm the Minahasa funders. If miners harm Minahasa funders, miners will find it difficult to work at the Tatelu mining.

Contracts and Wages

There is a risk to be borne by the miners in working in the pits, namely the possibility of landslides. Compared to a few years ago, the situation is now much more risky because the pit is deeper in order to get gold. Once by dug a pit 2 or 3 meters can already get gold, now the depth of the pit ranges from 30 to 150 meters. Another risk is that the result is very little or nothing. For example, the gold content in the gold ore is very small. If that happens then most likely the miners will not get wages. The risk for a funder if his mining business does not produce enough gold is that he will lose business capital because of the funder bears the cost of miner consumption and mining operations costs. In such circumstances, the funder with less capital will go bankrupt and close his business. Miners and funders both know about this situation. Because the technology used is simple, funders and miners alike know that their work is less predictable. Audry Paath, a funder said: "Mine is like buying a cat in a sack." (Interview, October 9, 2017) Another funder, Gidion Hormati, said: "In this mine there are many things that are incomprehensible." (Interview, October 10, 2017)

Under such conditions the wages at the Tatelu mining are different from those which are theorized in the P-A relations. If in the theory it is said that lazy miners will tend to want a fixed wage without seeing the results, and diligent miners will choose wages based on achievement. In mining activities there is information asymmetry. Only a miner knows his own abilities and conditions in a pit. Only a miner knows how to work in a pit. Rarely are the funders willing to enter the mine pit control how miners work in the pits, except the one who has been a miner. The deeper the pit the less likely it is for the funder to control the miners in the hole. Risks of probability of accident that the miners know too. Under these conditions it is natural that miners choose a fixed wage. Mining requires a fee that is considered large enough for small funders who do not have much capital. For small funders, failure to mine could bring the bankruptcy of its business. Therefore, it is natural that the funders choose wages based on the work. Taking into account the situation, in Tatelu generally miners and funders agree that miners earn wages based on profit sharing. This is a common practice in the Tatelu mining.

The result of mining work is in the form of gold ore or how many grams of gold produced after the gold ore is processed. Before agreeing to cooperate, miners usually will see the condition of the pit to estimate the potential of the existing gold ore and then talks with the funder on terms of employment. However, there is a common practice in Tatelu followed by miners and funders, namely: First, the funder must provide the first meal-drinking costs before the miners earn income from mining. The cost of eating the drink will be returned to the funder after mining gives results. Second, the funders are willing to provide the cost of daily living of the miners' families and the cost will be returned after mining gives results.

In Tatelu there is a habit that miner activity stopped temporarily after managed to get 130 sacks of gold ore. Of the 130 sacks of these ore were taken 30 sacks for submission to the land owner as the cost of land lease. The remaining 100 sacks are valued at IDR. The result is then reduced by the cost of miner consumption and operational costs incurred by the funder. And the money is part of the funder. After that the rest is divided into two parts, 20 percent for funders and 80

percent for miners. There are others who practice other ways, namely the funder takes 20 percent of the overall results, and then taken the cost of consumption and operational costs, and the rest is given to the miners. Which practice is done depends on the initial agreement between the miner and the funder. Ration of proceeds for each member of the miner's group is determined by the agreement of the miners themselves. For the funder who mines on his own land 130 sacks will immediately take 30 sacks for himself as a form of land rent.

There is a difference in remuneration between miners from Minahasa tribe and miners from the Bolaang-Mongondow tribe. For example, Minahasa miners prefer wages in the form of a share of the result of gold sales but miners of Bolaang-Mongondow prefer wages in the form of gold ore. However, the percentage of revenue sharing remains the same. It is said by Glenn Wuisan, a funder: "There is a difference in the sharing of results. Miners from Minahasa prefer to share in the form of gold but miners from Bolaang-Mongondow prefer to share in the form of gold ore. Yes, the one from Bolaang-Mongondow is like that. But it all depends on the initial agreement. So before the work begins there is talks first." (Interview, October 24, 2017) In Tatelu gold ore can be sold in sacks where one sack is currently valued at 150 IDR. Because the gold ore are not yet sure of the percentage of gold, it is possible that the results obtained by the Bolaang-Mongondow miners are very small if the percentage of gold is small. For Minahasa miners want more exact results, therefore prefer to be paid in the form of gold (not gold ore). Bolaang-Mongondow miner wants to get more gold by choosing a part of gold ore although the result may be less than expected.

There is a change in the distribution of gold proceeds as a form of reciprocity and commitment from miners and funders not to prioritize their own interests. At a time when the result is much smaller than the expected the funder allows the miners to take a greater percentage of the agreed upon. But at a time when the outcome is far greater than the expected the miners allow the funders to take a larger percentage than the one agreed upon. For example, funder takes 10 percent, not 20 percent when the outcome is much smaller than the expected. But at a time the golden result is considered to be very much the funder could take 25 percent, and the miner would willingly accept the 75 percent share. Kevin Dipan, a founder, said: "Poor little if I take a lot. I took a little more than the original agreement. It is okay. At a time when the gold is quite a lot, the miners willingly allow me to take a larger share than the previous deal." (Interview, October 3, 2017). It is apparent here that the agreement between the wage-sharing principles on the basis of these results could be change due to the specific conditions of mining, i.e. the uncertainty of the amount of gold produced. Both the miners and the funders do not pursue their own interests as much as possible.

Maintain a Principal-Agent Relationship

The P-A relationship between the funder and the miner in Tatelu shows that his agent has a stronger position than the principal. This is because in North Sulawesi there are several mining sites that allow miners to move from one mining location to another. Miners in Tatelu have had a lot of experience in mining in other places in North Sulawesi. In addition, the existing mining pits deepen deeper. This causes fewer miners willing to mine. In Tatelu itself existing mining pits have reached more than 100 meters from the ground. This exceeds the depth limit permitted by the government. Once just dig a few meters pit miners can already get gold ore. It requires miners who have had a lot of experience and have the courage to mine in very deep pits.

Because of the difficulty of searching miners, the funders try to keep the miners from moving to other funders. The effort to keep good miners working for them is done by developing good

relationships with miners, so the relationship between miners and funders becomes full of positive emotions. Miners feel personally cared for by the funder and the funder feels that the miners will not take actions that harm the funder. The good relationship between the miners and the funders can be seen from the length of the miners working on a funder. Miners who are unhappy with the funder to whom he works will terminate the contractual relationship with the funder. The funder considers it reasonable that the miners to terminate the contract if they are not satisfied with his funder.

In Tatelu, the miners may break the contract if they think the gold content in the gold ore is too small, although the gold ore that are mined have not reached 130 sacks. Sometimes there is also a miner who asks for permission to the funder to return to his place of origin for family affairs but then the miners do not return to Tatelu or instead move to work on other funders. Often the miners go home to celebrate Christmas or Iedul Fitri but after the feast ends the miners do not immediately return to Tatelu, they just come back after a month or two months. This can happen because the community where miners come from usually has a very strong kinship relationship. In addition, in North Sulawesi people will not have difficulty in meeting the needs of everyday life if people are willing to work anything.

The actions of the miners are clearly detrimental to the funders because mining activities have stopped for some time. To overcome it the funder tried to act to please the miner in order to remain faithful to work for him. For example, the funder gives money for transportation costs from Tatelu to his hometown as well as the cost of returning to Tatelu. There is another attempt by the funder to bind the miners, which is by paying attention to the consumption needs of miners. This consumption needs vary among different groups of miners. The funders try to meet the consumption needs according to the taste of the miners. The difference in taste is greatly influenced by the habits among different groups of miners. For example, miners from the Minahasa tribe have large eating habits with more sumptuous dishes compared to miners from the Sangihe-Talaud and Bolaang-Mongondow tribes. It is said by Kevin Dipan:

"Different, different. Minahasa people with Bolaang-Mongondow people are different. One of the differences is in consumption. That's different. Minahasa people are more luxurious. If the people of Minahasa spend 1 million but the Bolaang-Mongondow spends 800 thousand. That's the difference. For me consumption problem is not a consideration. If they eat they become strong, healthy. If we want to consider how it works if just eat tahu and tempe. Minahasa people rarely eat tahu and tempe. The people of Bolaang-Mongondow are frugal, thrifty. While we just feel sorry to see it. That's the difference. 'How do you want to be strong if you eat just that?' ". (Interview, October 3, 2017)

The need and diversity of these foods sometimes exceeds the needs and diversity of the food of its funders. This is especially the case when the funders are in difficult financial condition and should pay attention to the need for food for the miners. There are also funders who try to tie the miners by providing interest-free loans when the miners want to buy a motorcycle even though the funder must borrow money in the bank.

Through the personal relationships between miners and funders long enough as mentioned above, it appears commitment and reciprocity. Relationships and mutually beneficial acts between the funder and the miner occur for example during the division of the results as described above. At the time of the golden result a little funder usually voluntarily took the gold much less than the original deal. The funder feels sorry for the miners getting a very small share. Conversely, when gold is considered large enough, miners voluntarily allow the funder

to take a larger share than the previous deal. Therefore, at the time of the interview it was not surprising that there were miners working for a funder for more than five years and still wanting to keep working continue to the funder. He does not want to move to other funders who promise better facilities. Andre Mamonto, a miner, said: "I've been working for 10 years, working for Mr. David since 2007. I work from one pit to another. After getting the gold, move dig another pit again, so. There are already other funders offering me a job. I just said it next time. I want to gain experience by working with Mr. David." (Interview, October 10, 2018)

CONCLUSION

The results show that the P-A relationship between the funder and the miner is not as stated in economics. Funders use the social network of funders and social networks of miners to recruit miners. This is done because the funders do not know how the skills of miners. Social networks can provide information about the skills of miners. In addition, social networks are also useful as a means of social control so that miners and funders act in accordance with social expectations, such as breaking collective agreements. The P-A theory in economics says that the uncertainty of employment results encourages workers to choose fixed wages. In contrast to the P-A theory in economics, in the Tatelu mining, although the results are uncertain, miners and funders agree that wages are awarded on a revenue-sharing basis. However, the division of results is still negotiable where when the gold is quite a lot then the funders can be allowed to take a larger part of the original agreement and when the gold is very little then the miners are allowed to take a larger share than the original agreement. This shows that between the funder and the miner there is reciprocity and commitment in the form of mutually beneficial action for both parties. In such ways the principal-agent relationship between the funder and the miner can be maintained continuously.

This study has limitations because it does not pay attention to the internal dynamics of miner groups. Miner groups deal with funders through group leaders. This study only interviewed group leaders so it was not known how decisions in the group were made in relation to the funder. It is important to study the dynamics of small group that work in dangerous environment like in the mining pit.

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