



# An Anticipate the Scarcity of Agricultural Labour among Simalungnese, North Sumatra, Indonesia

Erondd L. Damanik<sup>1)</sup>, Rosmaida Sinaga<sup>1)</sup> and Maya Oktora<sup>1)</sup>

1, Universitas Negeri Medan, North Sumatra Province, Indonesia

erondddamanik@unimed.ac.id

**Abstract.** This article discusses the anticipated labour scarcity in the farming community in Simalungun. In essence, the problem focuses on culture-based labour exchange which is approached according to Malinowski's structural functionalism. Data collection was carried out through participant observation, in-depth interviews, and distributing questionnaires in 10 different locations. This study finds *Haroan*, an empirical cultural collaboration that ignores the wage system but rather a balanced reciprocal labour exchange. This culture-based principle is effective in anticipating a scarcity of labour whose core is perseverance, solidarity, loyalty and integrity.

**Keywords:** *Haroan*, Balanced, Reciprocity, Labour, Scarcity.

## 1 Introduction

The study does not focus on agricultural technology such as seeds, fertilizers, pesticides, and irrigation, including prices and markets, but rather on the farm management behaviour in dry and wet cultivation. Culture is a product of human behaviour, consisting of knowledge and technical processes. The farming community has the initiative, creativity, and local intellect to manage farms. More specifically, the study emphasizes the anticipation of the scarcity of workers to manage farms in rural areas. This anthropological study helps agricultural social engineering programs that are more participatory, and widespread within the framework of sustainable development agriculture. It empowers local inputs, wisdom, and values for agricultural sustainability.

The background for the study is agricultural management in Simalungun with a pattern of labour exchange, characterized collectively and immaterialism. Labour exchange has been a characteristic of agricultural management in the last two decades (2000-2020). This exchange is intended to anticipate the labour scarcity of managing agriculture, the main source of income for two-thirds of the population in Simalungun Regency. Industrialized agriculture, is the identified main factor of labour scarcity. On the one hand, the transition from subsistence to commercial is seen as changing in line with agricultural modernization. However, on the other hand, agriculture does not completely shift from subsistence to agribusiness.

Industrialized agriculture, gradually abandoning subsistence for agribusiness. However, agribusiness is carried out through the application of limited technology. Agricul-

tural industrialization is only focused on the use of chemical fertilizers, seeds, and pesticides, while mechanical equipment is still minimal. A tractor or hand tractor, for example, is only used to loosen the soil, while a hand sprayer is used to spray pesticides. Buffalo is not used unless for transporting agricultural produce from the fields to the village. Wage and contract-based work systems are reduced. The mechanism for payment of wages, both in the form of money and rice, has moved into labour exchange. Trends in agricultural management, thus labour-oriented, give priority to labour. Limited capital and a high desire for commercialization are indications of labour exchange.

The study compares labour exchanges in two different topographies, “Upper Simalungun, and Lower Simalungun” [1]. In both regions, agriculture involving the dry cultivation method in the highlands and wet cultivation method in the lowlands has been experiencing commercialization and labour scarcity [2]. Labour exchange, in both regions, has become an effective strategy to anticipate labour shortages while ensuring agricultural sustainability. It covers all agricultural activities in one or more seasons; tilling, seed sowing, weeding, fertilizing, pest control, and harvesting.

In social science, agriculture is an interesting object of study. Several researchers have focused on anthropological agricultural investigations [3,4,5,6]. On the one hand, farmers are seen as “irrational” [7], “lazy producers” [8], “efficient but poor” [9], an “involute” [10] and “limited needs, an attitude of satisfaction without compulsion” [11]. On the other hand, farmers are considered to have “economic morals” [12], “rational and willing to take risks” [13]. Farmers can combine “local knowledge and outside influences to create agricultural knowledge, strategies for use of resources, and gradually adopt new agricultural techniques” [14]. Farmers are deemed to have the basis of “cooperation, solidarity, loyalty, and mutual assistance”. Agricultural knowledge is a reproduction of knowledge about the environment, behaviour based on the “local circumference, time-tested experience, and education” [15].

In Simalungun, socio-economic studies on agriculture were carried out by several Western researchers with different focuses. Agricultural economics is a determinant of social change, including social relations, work ethic, time-effectiveness, agricultural management, commodity types, collaboration, and mobility [16,17]. Gradually, subsistence agriculture was turning into agribusiness [18]. This transition to agribusiness resulted in the “reduction of poverty” [19]. The transition from subsistence to agribusiness shows the “rationality of the farming community” [20]. The farming community reflects dualism; “not fully polyculture-patterned peasants, but not fully monoculture-patterned farmers either” [21]. Simalungun farmers were not identified as “peasants” or “farmers” [22]. Agriculture, despite having a commercial pattern, uses its surplus to fulfil basic needs. Subsistence farming, in other words, is not abandoned at all even though in practice it is commercially oriented. Commercial desire is driven more by meeting basic needs, not by investment or savings.

The scarcity of labour in the last two decades is anticipated through exchanges. Exchange is a form of institutionalizing the social function of the behaviour. It involves cooperation, mutual assistance, solidarity, and loyalty. The study is an exploration of functional cultural patterns, a theme that is rarely elaborated on in anticipating the scarcity of labour in the Simalungun farming community. Malinowski’s structural-func-

tionalism approach is used to analyze the object of study. Labour exchange is the institutionalization of behavioural functions. It is an effective means of anticipating labour scarcity. It also ignores wages and material payments, except in the form of labour. Labor exchanges are reciprocal, non-material transactions, representing effectiveness, completeness, and worker solidarity.

## 2 Theoretical Framework

Exchange conducted to anticipate the scarcity of labour in the Simalungun farming community is reciprocity. Simply put, reciprocity is a mutual exchange between individuals and groups within a certain period. Reciprocity, although derived from the exchange mechanism in the traditional economic system [23,24], also be found in modern society. In Simalungun, for example, reciprocity becomes a mechanism to anticipate the scarcity of labour to manage farmlands. The parties involved reduce the system of daily wage and contract pay. Comparability is seen in the exchange of labour among group members.

The reciprocity mechanism is derived from the notes of Malinowski [25] on the *Kula* economic system in the Trobriand Islands. *Kula* is a trade mechanism employed in the exchange of goods and services. It shows the pattern of transactions in a single continuous relational line. On one side, the exchange is carried out without compensation, and on the other side, it demands compensation. Reciprocity is built on the strength of solidarity and loyalty among individuals and groups. It affects the continuity of local values and traditions. Solidarity and loyalty, the nature of reciprocity, are manifested in the form of collaboration and mutual assistance.

Reciprocity creates a moral burden on the part of the offender to return everything they received: goods, services, gifts, money, gifts, energy, support, and willingness. It establishes social ties through religion, beliefs, social organization, and the common experience of being on the same boat, to maintain and continue social relations. Reciprocity is thus rooted in the shared feelings of each member. Reciprocity in the *Kula* economy reflects selfless actions and a pattern of collectivism. However, it gradually shifted into self-interest for personal gains. Reciprocity is thus not a free exchange.

Social interaction, the basic assumption of reciprocity, is an economic transaction, but it is not always valued materially. Reciprocity includes economic and social exchange. In terms of economic exchange, it refers to the comparability of goods, services, and value-added objects, while in social exchange it includes non-material aspects; service, support, willingness, honour, and participation. Reciprocity relies on exchange to receive awards, rewards, support, honour, willingness, and materials. All forms of "exchange" [26] and "gifts" [27], and never come free.

Reciprocity, according to Sahlins [28] is divided into three categories; (1) generalized reciprocity, the exchange of goods and services without the preset return limits. It is not law, but rather moral truth, that controls and drives the actions of giving and receiving; (2) balanced reciprocity, the goods, and services exchanged are comparable and marked by the time of receipt and return of exchange. Exchange should not entail

additional value from the goods and services involved. Agents of exchange are autonomous social units, and (3) negative reciprocity, unequal exchange, which harms either or both parties due to matters of denial. Kinship, the principle of reciprocity, reflects human ethics. Kinship begets solidarity and loyalty. Human reciprocity is used to mobilize resources in society. Mobilization is realized through collaboration and mutual assistance. Reciprocity is born from the idea that humans are social creatures. As social beings, the exchange system underlies all aspects of human life. The exchange system plays an important role in meeting the needs of goods and services. Every agent of exchange has a moral obligation to return in the same or different form.

In this study, labour exchange is seen as reciprocity according to the structural-functionalism paradigm. Reciprocity, according to structural-functionalism is an understanding of the relational and functional patterns of social structure. Structural-functionalism is rooted in the thinking of Spencer [29] and Comte [30], but it was Durkheim [31] who developed it systematically. The structural-functionalism in social anthropology was pioneered by two British scholars; Radcliffe-Brown [32] and Malinowski. However, both had different views when it comes to its function and structure in society [33]. Its function, according to Radcliffe-Brown [34], is for social institutions to contribute to the stability of social structures, while according to Malinowski, it is the use that underlies the stability of the structure. Individuals are psychobiological realities fulfilling 7 psychological and biological needs: nutrition, reproduction, physical comfort, safety, relaxation, movement, and growth. All activities that fulfil those psychobiological needs, according to Malinowski, are deemed cultural. Cultural activities are modifications under social habits and the environment. Those are thus the instruments used to fulfil needs according to the social environment [35].

Reciprocity, through Malinowski's thought, is an instrument for meeting the farming community's needs for labour. Reciprocity becomes an instrument to ensure the sustainability of the agricultural sector, both subsistence and agribusiness. As an instrument, reciprocity is conditioning, imposing limits on human activity through norms and values. The instrument produces a distinctive pattern of cultural behaviour, which appears in the form of norms, customs, ideas, artefacts, and beliefs. The overall behaviour is the adaptation and implementation of norms, customs, beliefs, and ideas [36,37]. Thus, labour exchange is reciprocity, the institutionalization of behaviour functions according to the Simalungun cultural norms, values, ideas, customs, and beliefs.

Culture concretely includes inherited artefacts, goods, technical processes, ideas, habits and values and parallels that of Tylor [38]: "that whole complex which includes knowledge, beliefs, art, law, morals, customs and all other capabilities and habits acquired by man as a member of society". According to both definitions, reciprocity includes knowledge and technical processes, products of cultural behaviour. As a product of behavior, reciprocity is thus universal, containing capability and habit, carried over from one generation to the next.

Reciprocity in social implementation, according to Malinowski's structural-functionalism, appears to be more systematic: (1) the functioning whole, in which reciprocity functions as a whole. The basic principle of exchange is collaboration and mutual assistance. (2) systems which are significant in the community to fulfil technical processes and knowledge; and (3) social inheritance, in which the behaviour of reciprocity

is not determined by racial determinism, but rather inherited socially from one's predecessor. The social environment is a determinant of behaviour [39]. Social inheritance is a force that includes norms, values, customs, structures, and systems, influencing, and shaping the personality of individuals in the community. Mutual assistance and collaborative behaviour determine the limitations of humans in managing every aspect of their daily lives.

Functional patterns appear in the institutionalization of behaviour to meet human needs. As such, reciprocity is the institutionalization of work functions, which include personnel, material culture, knowledge, rules, beliefs, and charters. Reciprocity is a cultural imperative with a relational pattern, functional, and significant in meeting psychobiological needs. Being a cultural imperative, reciprocity includes two main points: (1) instruments, containing technical process and knowledge, and (2) integration, containing solidarity and loyalty. Reciprocity, thus, is the condition which must be fulfilled if the community is to survive. The theoretical framework above is used to analyze exchanges in anticipation of labour shortages in the village. The relevance of the approach to the object of study is that labour exchange is the institutionalization of behavioural functions for collaboration and mutual assistance.

### 3 Method

This study was conducted qualitatively using a pragmatic approach [40]. A qualitative study aims to describe labour exchange in an objective, subjective, unbiased, and impartial manner. Exchange, a form of institutionalizing behaviour that functions to anticipate labour crises, requires a qualitative explanation. A pragmatic approach with a mixed-method design [41] is an ideal choice to understand the reality of exchange to fulfil labour needs. A pragmatic approach explains social reality with the best information [42] or becomes useful when information from a single source proves insufficient [43]. A pragmatic approach refers to a nomothetic, causal-functional, and holistic view of understanding a problem [44].

Malinowski's structural-functional paradigm is used to understand exchanges in anticipation of labour scarcity. Reciprocity, in this case, labour exchange, is a structural-functional relationship, the institutionalization of behavioural functions. Cultural activities are born from the experience of associated relational units [45, 46]. The structural-functionalism paradigm, in the case of labour exchange, is parallel with a conceptual model of underlying human behaviour [47] in anticipating labour scarcity. The mechanism explains general reciprocity, proportionality, and negativity, all of which are products of socially institutionalized behaviour.

The subjects of the study were farmers in 10 different villages, representing 2 topographical characteristics, dry cultivation, and wet cultivation. Data were collected by observing participants, in-depth interviews, and questionnaires. Observation of participants was carried out in the 10 studied villages. In-depth interviews involved 20 informants, consisting of 10 key informants: 5 village heads and 5 traditional institution

leaders. Key informants were 10 farmers, randomly selected at the study site. The questionnaire contained 10 questions, each giving 4 options, disseminated to 250 respondents, consisting of randomly selected 25 respondents per village, who represent 2 topographical environments. Research questions determined the methodology and rhetoric because all approaches have validity [48]. An understanding was formed based on the detailed narrative of the informant in the natural environment.

All details, patterns, mechanisms, structures, and functions were collected, recorded, and became materials for analysis. The results of observations and interviews became the basic framework to uncover the reality and format of reciprocity, while the results of the questionnaire complemented the analysis. Descriptive-qualitative analysis was used to understand reality and reciprocity formats. The analysis focused on socially institutionalized labour exchange functions in the Simalungun farming community. The study contributes to a more participatory, intensive, and extensive social engineering, empowering input, wisdom, and locality values in a format of sustainable development agriculture.

## 4 Result and Discussion

Simalungun Regency in the North Sumatra Province of Indonesia has a tropical climate. Geographically, it is located at 02036'-03018' North Latitude, and 98032'-99035' East Longitude coordinates. The population in 2019 was 863,693, spread across 32 districts, 27 subdistricts, and 386 villages [49]. The total land area is 438,660 hectares, consisting of 138,838.46 hectares of forest area, with the remaining area being residential and agricultural. The Pine (*Pinus mercuric*) forest in Girsangsipanganbolon District was spearheaded by the Dutch colonial government in 1925 [50] whereas the Meranti (*Shorea sp*) forest in Purba District was developed during the British occupation of 1947. Besides supporting the tropical climate, both contribute to the development of Lake Toba tourism [51]. Forests in Simalungun are upstream rivers that flow into Lake Toba and the Malacca Strait.

Topographically, the regions are distinguished by elevation; Upper Simalungun to the west, and Lower Simalungun to the east. Upper Simalungun is a plateau, with an average elevation of 700-1400 meters above sea level. Its territory consists of Silimahuta, Pamatangsilimahuta, Purba, Purbahorisan, Dologsilou, Dologpanribuan, Dologmasagal, Dologpardamean, Rayahuluan, Raya, Rayakahean, Jorlanghataran, Sidamanik, Nagoridolog, Raya, and Paneitongah. The main agricultural method here is dry cultivation, without irrigation, and which relies on rain. Second crops and tubers are relatively abandoned and the farmers have shifted to "growing horticulture, a commodity introduced by Botje, a Dutch agricultural scholar, in 1915" [52].

Coffee and oranges (*Citrus X Sinensis*), two new commercial commodities, began to be planted in 2005 and 2010. Other than Karo, Upper Simalungun is the largest producer of horticulture and oranges in North Sumatra. Horticultural production includes potatoes (*Solanum tuberosum*), tomatoes (*Solanum Lycopersicum*), eggplants (*Solanum melongena*), cabbages (*Brassica oleracea var. Capitata*), broccoli (*Brassica oleracea*

var. *Botrytis*), mustards (*Brassica Chinensis* var. *Parachinensis*), carrots (*Daucus Carota*), chilli peppers (*Capsicum annum*), lettuces (*Lactuca sativa*), and leeks (*Allium porrum*). Every day, hundreds of tons of agricultural produce are marketed to Medan. Some of them are exported to Java and abroad. Rice (*Oryza sativa*) is still cultivated in small quantities.

Lower Simalungun is a lowland with an average elevation of 100-700 meters above sea level. The main agricultural methods used here are wet cultivation and irrigation. Its territory consists of Girsangsipanganbolon, Sarbelawan, Bandar, Bandarmarsilam, Ujungpadang, Bosarmaligas, Hutabayuraja, Jawamaraja, Tanahjawa, Pardagangantomuan, and Siantar. Most rice fields have been converted to plantation areas since 1907 [53]. The dominance of tea (*Camellia sinensis*), rubber (*Hevea brasiliensis*), palm (*Elaeis oleifera*), and chocolate (*Theobroma cacao* L) commodities had impacts on the reduction of agricultural land area [54]. Farmers lost land and some became plantation labourers instead. Some farmers who do not work the plantations turn to planting rice (*Oryza sativa*), corn (*Zea mays*), and cassava (*Manihot esculenta*). Lower Simalungun is the largest producer of these three commodities in North Sumatra. Tea, one of the plantation commodities of North Sumatra, can only be found in Simalungun. Figure 1 below is a map of the Simalungun Regency.

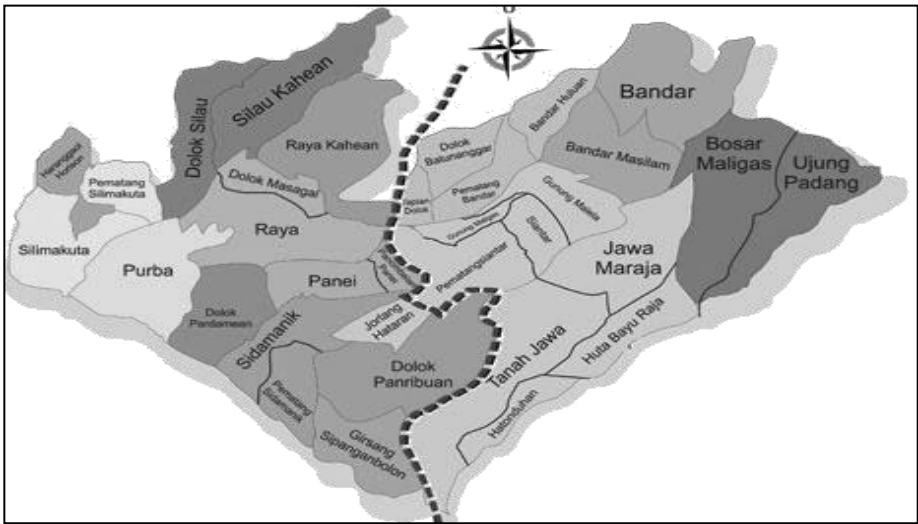


Fig. 1. Map of Simalungun Regency

In Simalungun, 67 % of the population relies on agriculture, both dry and wet cultivation methods, as a source of their basic income. Based on the production approach, the agricultural sector in 2019 rose by 6.18% and contributed 48.6 % of the region's self-made revenues. Agricultural agents and distributors are found in each village, funding expeditions to transport agricultural products as far as Karo, Medan, Pamatangsiantar, Riau, Batam, and Java Island. In the sub-district centres, shops are selling agricultural equipment and supplies, chemical fertilizers, compost, pesticides, and seeds. The payment mechanism is done in cash, instalment, or post-harvest. It is

not uncommon for agricultural products to be bought by agents before harvest. If prices go up, agents buy up all the products. However, if prices decline, it is not uncommon for harvests to be delayed, sold at a modest price, or left to rot in the fields, as natural compost.

Simalungun farmers are not agriculture graduates- they are farmers by experience who learn from others or are otherwise time-tested. Supervisors from the agricultural services are not operating the theoretical view and are not able to overcome pests and plant diseases. An interview with Hermanus Girsang through personal communication, January 30, 2020 in Silimahuta, mentions the following: [55]

“In general, the practice of agriculture is based on experience. We learned a lot from the farmers that we believe to have been successful or asked questions directly to agricultural shops. Right now, our agricultural output is quite good. However, the fundamental problem we face today is the difficulty in getting labour. Almost no one can be persuaded to work in the fields, even though they are given wages, even though labour is direly required to plant, weed, fertilize, spray, and harvest. Labour is also needed post-harvest”

In the last 2 decades (2000-2020), farmers have been complaining about (1) uncontrolled pests and diseases, (2) the relatively high price of chemical fertilizers and pesticides, (3) fluctuations in the value of produce, oftentimes at very low prices, (4) agricultural supervision is not functioning optimally, and (5) scarcity of labour to work the farmlands. This study, as explained above, focuses on anticipating the scarcity of labour to manage agriculture. Scarcity has implications for labour difficulties, which in Simalungun villages is anticipated through reciprocity, as explained below.

The scarcity of labour managing agriculture is influenced by 6 factors; (1) the transition from subsistence agriculture to agribusiness in the mid-1990s; (2) land intensification and agricultural diversification; (3) competition for labour; (4) limited payment of wages; (5) migration of young people to the cities, to pursue higher education or to look for jobs; and (6) the advent of investment farmers. However, commercialization has been identified as the main cause of labour scarcity. It has an impact on 3 things; (1) transition from subsistence agriculture to agribusiness with the hope of gaining as much profit as possible. Farmers adopt new commodities even though they do not have enough knowledge. Farmers rely on experience, sharing knowledge among farmers, or asking those who have succeeded; (2) agricultural intensification. Each owner prefers to work in his area than on someone else's land. Daily wages, contracts, and other payment materials are reduced except for labour exchange. The “agricultural involution” in Java also occurred in Simalungun. However, farmers were able to anticipate involution through commercialization; (3) commodity diversifications.

Despite being commercially oriented, it is not monoculture but rather polyculture. The general reality of agriculture is to combine commercial and subsistence commodities (intercropping). Oranges and coffee are planted in one field, and in the other are mustard greens, corn, tomatoes, cabbages, and cassava. For example, it is not uncommon for chilli to be planted between rice and corn. Cabbages, tomatoes, mustard greens, potatoes, broccoli, leeks, and chillies are planted between oranges and coffee. In the



fields, rice and fish are cultivated simultaneously. The diversification method is intended to anticipate prices, and (4) inability to pay wages. Daily workers are paid a wage of Indonesian Rupiah [IDR] 85,000 per day, plus snacks, cigarettes, and betel. This means that workers get an average wage of IDR 100,000 per day. People from Java and Toba who seek jobs in Upper Simalungun need daily and contract work. However, only a small proportion of farmers can pay their wages.

Although commercially oriented, farmers have not yet employed larger, stronger, and faster machinery. Large machines such as tractors in dry cultivation and hand tractors in wet cultivation are used to loosen the soil. Compressor machines and sprayers are used in dry cultivation, but the operation requires labour. Hand sprayers, on the other hand, are used in wet cultivation. Agricultural technology products used are merely pesticides, chemical fertilizers, and superior seeds. Agricultural management includes sowing, planting, weeding, fertilizing, and harvesting, relying entirely on labour. The economy of farmers is highly dependent on the commercialization of subsistence agriculture. However, commercialization on the one hand requires labor and capital, but on the other hand, it has extremely limited availability.

Before the mid-1990s, agricultural management was carried out through wage payment mechanisms, both daily and contract-based. The average wage is IDR 65,000 per day. The farm owner provides snacks twice daily, in the morning and the evening, as well as betel for women and cigarettes for men. Work starts at 09:00 AM and ends at 18:00. The success of agriculture encouraged Toba people to migrate to Simalungun, followed by the Javanese people who migrated from Lower Simalungun to Upper Simalungun. In Simalungun, Javanese and Toba people became agricultural workers. However, during the 1997 economic recession, agriculture in Simalungun collapsed. The price of produce dropped while the prices of fertilizers, seeds, and pesticides increased. Most farmers could not afford to pay daily wages or wholesale, snacks, betel, and cigarettes.

Despite the recession, production plummeted while demand increased, so the farmers had no choice but to continue farming. To reduce their losses, in 2005 most farmers switched to *Kopi Ateng*, an Arabica Coffee variety from Gayo, with a production time of 2 years. Gradually, Ateng Coffee was able to revive the farmers' economy. Agricultural intensification and diversification were reapplied. Horticulture, crops, tubers, and coffee were planted simultaneously. Corresponding types of pesticides, chemical fertilizers, and seeds were introduced by agricultural shops. Farmers' economy rose. In 2010, citrus commodities were planted in Upper Simalungun. Since 2010, Upper Simalungun has become the second-largest producer and centre for horticulture, oranges, and coffee after Karo, while Lower Simalungun has become the main producer of rice, corn, and cassava in North Sumatra.

Commercialization, intensification, and diversification affected the availability of labour. Villages in Simalungun have labour difficulties. Javanese and Toba people demand payment of daily or contract wages. However, both are difficult to monitor and supervise. The daily pay is oriented toward working hours; it starts at 09.00 AM, with the first break for 15-30 minutes at 11.00, another break for 60 minutes at 13.00, the second break for 13-30 minutes at 16.00, and leave at 6.00 PM. Contract payments are

not related to working hours, but rather to the speed at which a job is completed. However, the working conditions are often not in line with expectations. In Upper Simalungun, contract pay during the harvest season is extremely dangerous. Not infrequently a small portion of the harvest is hidden in the field, or some brought home. At night, harvests hidden in the fields would be taken, joined with those brought to the home, and then sold to agents. Farmers lost money and this incident sowed distrust in the labourers. Daily or contract payment is generally not preferred unless the owner also works in the fields.

In Lower Simalungun, Javanese and Toba people became plantation workers. Outside the plantation, both worked the fields cultivating rice such as in Paneitongah, Bahapal, Girsangsipanganbolon, Bandar, and other areas. Aside from rice, farmers also cultivate corn and cassava in Tanohjawa, Pardagangan, Dologmasagal, Dologpardamean, and other regions. Most farmers in Lower Simalungun rely on plantations or farm labourers. Fluctuations in plantation commodity prices have an impact on the employment situation. Low wages or work termination are the reasons to leave the plantations and try other jobs. A small portion earns a living as farm labourers in Upper Simalungun. An interview with Djalusin Sinaga through personal communication, December 15, 2019 in Tanohdjawa, mentions the following: [56]

“Work in the fields is minimal. The price of rice, corn, and cassava is low. Jobs on plantations are uncertain. We turn into small traders, just to make a living. Two of our children moved to Saribudolog, and they said labour is needed there. However, after two months of staying there, we are back here where we started. According to them, there is almost no daily wage in Saribudolog because the work is done through labour exchange, just like in our home village. Then, our two children joined the villagers in Sei Mangkei, to become construction workers”

Some rich farmers in the village recruited Javanese families as workers. All basic needs, including housing, food, water, and electricity are provided by the owner of the field. Wages are agreed upon, for example,  $\frac{1}{4}$  of the harvest profits after deducting the cost of basic needs. This pattern became widespread before the recession and was hardly found anywhere post-recession. In fact, in relative terms, there is enough available labour to manage agriculture. However, the habit of wage and contract pay is often not in line with expectations. The motivation for work is solely for wages and cannot be directed according to the wishes of the landowner. Labour lacks responsibility and does not have a sense of belonging. Also, the availability of labour is very uncertain.

Planting, fertilizing, and harvesting require relatively many workers but are difficult to obtain. Uncertain labour availability is a common phenomenon faced by farmers as well as a threat to the sustainability of the agricultural sector since 2000. In addition to observation and interviews, questionnaires were distributed to 250 respondents in the 10 villages studied, each consisting of 5 villages and 125 respondents in Upper and Lower Simalungun. Figure 2 is the response of 125 respondents in Upper Simalungun to the significance of the exchange in anticipating a labour crisis.

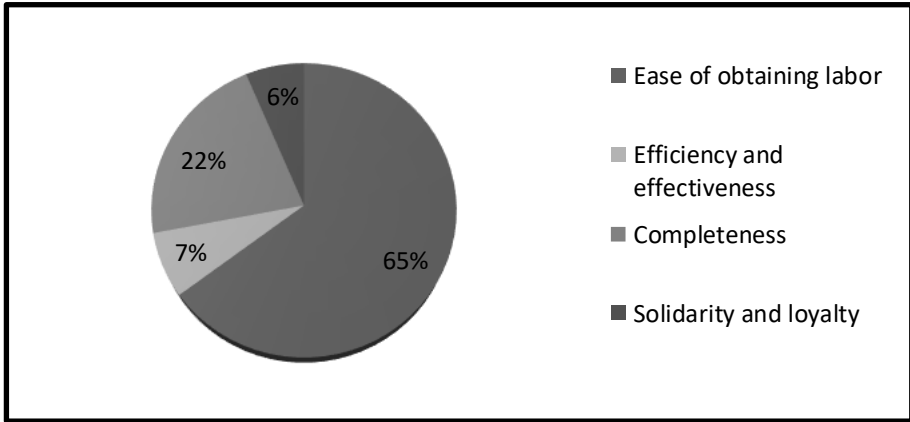


Fig. 2. The significance of the *haroan* in Upper Simalungun

Figure 2 above shows that 85 % of farmers in Upper Simalungun stated that the exchange was related to the ease of obtaining labour. A number 22% of farmers stated that the exchange had the prospect of work completeness. The reality in Upper Simalungun is different from the Lower Simalungun, shown in Figure 3.

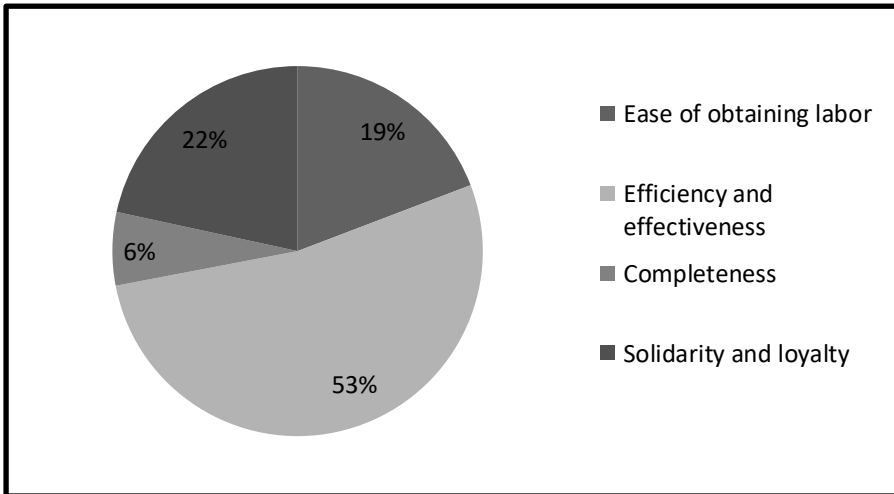


Fig. 3. The significance of the *haroan* in Lower Simalungun

Figure 3 above shows 53% of farmers in Upper Simalungun state that the exchange mechanism is associated with efficiency and effectiveness. Furthermore, 22% state the association with work solidarity and loyalty. Different responses to exchanges are influenced by the following 4 points: (1) differences in the characteristics of the dry and wet cultivation community. The dry cultivation community is more individualistic than

the wet cultivation community which is communalistic: (2) the orientation of the sky (rain) on dry cultivation forces the community to look for better strategies and tactics to meet their daily needs, while the orientation towards mountains (rivers) on wet cultivation requires solidarity in the workings of rice fields, (3) commercial cultivation orientation in Upper Simalungun impacts on the formation of personality that becomes more progressive, while the prevalence of plantations in Lower Simalungun has impacts on the local communalistic character; (4) cultivation area in Lower Simalungun only focuses on aquatic plants, while Upper Simalungun tends to be diverse to affect the local characteristics, patterns, and varieties.

Upon determining the order of significance in Figures 2 and 3 above, the respective definition of reciprocity is found as follows: (1) labour availability, (2) completeness, (3) efficiency and effectiveness, and (4) solidarity and loyalty. These four points underlie comparable reciprocity in the farming community and serve as a framework for anticipating labour scarcity. Although they have different meanings, farmers recognize that exchanges are quite effective in anticipating a labor crisis. In other words, reciprocity is a determinant of the continuity and dynamism of agriculture in Simalungun.

In Simalungun, the typical pattern of working the fields and rice paddy is labour exchange. The individual labour exchange is referred to as picking up the workforce, and collectively it is referred to as *haroan*. Examples of individual exchange mechanisms are; A participates in fields belonging to B, so B is obliged to participate in fields belonging to A. If A recruits 3 workers, for example, B, C, and D, then A is obliged to work in the fields belonging to B, C, and D. Collective exchange is a kind of workgroup, consisting of 5-8 people, working alternately in the members' fields. Collectively, the workgroups take turns completing a job. When the work is complete, they move on to other members' fields, and so on. Both individual and group exchanges have a basic principle: they do not accept payment of money or materials in turn for the workforce.

Compared to individual exchanges, a collective exchange is more desirable; (1) greater labour availability and impact on completeness acceleration; (2) group members have responsibilities and a sense of belonging, assuming each field to be part of their field; (3) in addition to collaboration, collective exchanges also foster mutual assistance, advice, costs, equipment, and lending; (4) group solidarity and loyalty is reflected inside and outside agricultural activities. In traditional ceremonies, for example, group members become workers supporting the implementation of the ceremony. The group is also a place to lend and borrow for agricultural or school needs. It is not uncommon for members who obtain abundant harvests to give gifts to other members. Collective reciprocity, *haroan*, is thus not only about work in the fields but includes the whole process of life as long as the group exists. An interview with Mangatur Saragih through personal communication, January 25, 2020 in Raya, mentions the following: [57]

“mutual assistance in farming in Simalungun is considered *haroan*. In principle, the work is not paid for with money or rice, but rather as a workforce for the workforce. The *haroan* mechanism is derived from the ways one manages rice farming according to the ancestors of the Simalungun people. However, along with the times, the Simalungun peasant community has not been too practising, when in fact this method contributes to and outside of agriculture. *Haroon* is an inspiration for Simalungun people that success can be obtained through mutual assistance. Right

now, I am happy that *haroan* is becoming more popular among Simalungun people”.

*Haroan* is the best pattern to guarantee the availability of labour in the agricultural sector. *Haroan* is a cultural activity imbued with member solidarity and loyalty. Both solidarity and loyalty are the basis of collaboration expressed through helping, lending, and supporting each other. *Haroan* has social and cultural implications, namely cooperation. *Haroan*, is etymologically derived from the word *horja* or work. *Haroan* is a noun that means cooperation. *Marharoan* is an adjective that means to be carried out cooperatively. Anthropologically, *haroan* is a cultural activity with a pattern of cooperation. The principle of cooperation becomes a pillar of life, social existence contains collaboration.

*Haroan* is an internal labour exchange, not paid for with money or materials but rather through an exchange of labour. The formation of groups is based on consensus. Member recruitment is not based on economic strata, an agricultural area, or types of commodity but rather more on compatibility, commitment, solidarity, and work loyalty. Each group member has the same rights and obligations. Group members are obliged to attend every job and obtain the right of labour exchange. Its members consist of men or women, field owners. Value-added exchanges are betel for women, cigarettes for men, coffee or tea, and snacks in the morning and evening. In the planting and harvesting seasons, especially rice, the host usually serves lunch at the farm. However, this is optional, depending on the economic capabilities of the members. Denial of an agreement has social implications. Each violator is expelled from the group, and ostracized, and the risk includes difficulty finding a new group.

Member replacements are possible, but the appointment of new members is carried out by old members. Each member works in the other members' farmlands in turn. Exchange is carried out repeatedly from one planting season to the next. The work covers one of all stages of agriculture; from tilling, seed sowing, weeding, and harvesting to post-harvest. Exchange is not conducted based on the similarity of work objectives for each member. For one member, the objective of the work may be tilling, while for others it can be weeding or harvesting. During its implementation, this cultural-based agricultural workmanship model is quite successful in anticipating the scarcity of labour in the Simalungun rural environment.

The main essence of the exchange thus focuses on 3 things, namely (1) availability of labour, (2) cooperation, and (3) solidarity and loyalty. The labor exchange, *haroan* is balanced reciprocity in the Simalungun community. *Haroan* was developed to meet the workforce in managing the agricultural sector. *Haroan* contains the knowledge and technical process. The exchange was chosen in line with the scarcity of workers managing agriculture. Figure 4 below shows the essence of *Haroan* in Simalungun.

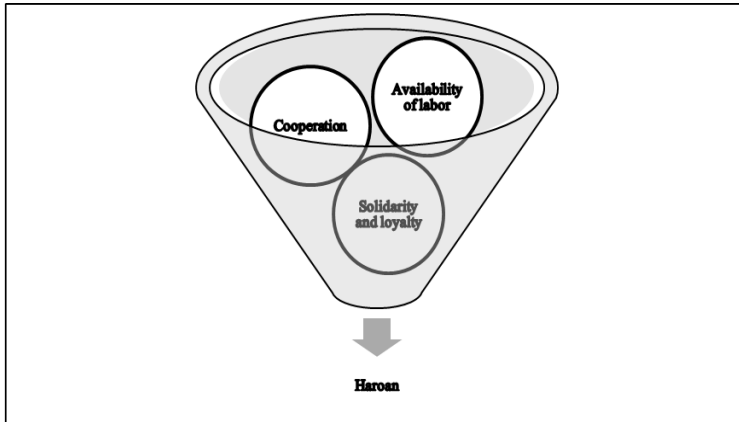


Fig. 4. The essence of the *haroan* in Simalungun

*Haroan* is a functionalized institutionalized behaviour to anticipate labour scarcity and maintain solidarity and loyalty in the farming community. *Haroan* is thus culture-based reciprocity, which functions to foster collaboration and mutual assistance. *Haroan* is the institutionalization of behaviour functions to meet the needs of agricultural labour. The institutionalization of functions is depicted in the pentagonal social structure of Simalungun; *tolu sahundulan*, *lima saodoran* or three equal sittings, five hands in hand [59], consisting of the extended family of the wife from a nuclear family (*Tondongni tondong*), the nuclear family, (*Tondong*), relatives of the husband from a nuclear family (*Sanina*), relatives of the wife from a nuclear family (*Boru*), and the relatives of women from *Boru* family (*Boru ni Boru*) [59,60].

The structure of three equal sittings reflects the character of dry cultivation, while five hands in hand reflect that of wet cultivation [61]. In Simalungun, the combination of both affirms the character of dry cultivation in the highlands and wet cultivation in the lowlands. The triad structure is a union between the patriarchal sky and matrilineal earth. Dry cultivation communities always look vertically towards the sky rather than horizontally towards the mountains. The sky is a source of water, providing certainty of life on Earth. The sky is a source of blessing to ensure the process of life. The structure of five hands in hand is the union between the patrilineal divinity of the mountain and the matrilineal river.

The five-hands-in-hand structure is an analogy to life by the river. The upstream of the river located on the mountain is the base, the downstream is the tip, the middle part is the centre, and the left and right are the diasporas. The river is the basis for the concentration of wet cultivation and settlement. The river is a source of irrigation, flushing manure, catching, or raising fish, as well as transportation. Wet cultivation people tend to look horizontally at the mountains rather than vertically at the sky. Mountains are upstream water, the source of life that flows blessings to everyone living along the river. Downstream is the sea, a collaboration of humans who receive blessings from the flow of the river water. However, occasionally the river poses a threat, the danger of floods destroying agriculture, causing property damage and even fatalities, so the ceremony must be performed.

The river analogy reflects the balance, and orderliness of the cosmos, and social life. The implementation of the five structures reflects the traditional way of life. Five

structures describe the order of the cosmos, centred on the main settlement, starting from upstream (mountain), ending downstream (sea), and widening to the left and right. Five structures, thus describing the relationship between social life, society, and the cosmos [62]. The signs of nature, joy, and sorrow indicate social life related to the cosmos. Life's success, disputes, conflicts, and chaos are a reflection of the cosmic imbalance in social life. The combination of three equal sittings and five hands in hand is pentagonal, resembling the facade of the Simalungun traditional house. The pentagonal structure reflects the river upstream on one side and the river downstream on the other side. Upstream and downstream become the determinant of spatial orientation. The pentagonal structure is thus a civilization that combines dry and wet cultivation.

*Haroan* is the union between the magical patrilineal sky and mountains and the matrilineal earth. The sky and mountains are the sources of water for agriculture on earth. However, the sky and mountains that depict water sources often pose a threat to agriculture, forcing humans to perform rituals and ceremonies, plant at the beginning, and celebrate the harvest at the end. *Haroan* is human behaviour, namely the abstraction of functional relations between the environment, society, and norms that form a model [63]. Thus, *haroan* is a product of institutionalized human behaviour and consists of a set of integrated networks to meet the needs of life. The pentagonal social structure is the basis of the configuration of cultural activities, a determinant for the formation of a system that applies to society. The institutionalization of *haroan* functions involves norms, institutions, ethics, and kinship. *Haroan*, the finding of this study, is in line with reciprocity as stated by Malinowski. *Haroan* tends to be comparable to reciprocity as stated by Sahlins. The basic principle of *haroan* is labour for labour and ignores the value of the exchanged workforce. This principle is parallel with Mauss and Blau and contains knowledge and technical processes of managing agriculture. *Haroan* demands participation and accuracy of work without assessing agility and speed.

The contribution of this study, *haroan*, was developed into social engineering to guarantee the availability of labour. The principles contained can increase participation, intensive, and widespread because it is integrated into the cultural system. The institutionalization of behavioural functions plays a role in shaping social configuration, collaboration, and mutual assistance. *Haroan* functions to anticipate the scarcity of workers in the framework of sustainable development agriculture. It empowers local inputs, wisdom, and values for agricultural sustainability.

## 5 Conclusion

Labor exchange, *haroan* is a mechanism used to anticipate labour scarcity. The basic principle of exchange is labour and ignores the payment of money and materials. Exchange orientation is the availability of labour, collaboration, completeness, and solidarity. The study concluded that *haroan* is balanced reciprocity in anticipation of labour scarcity. The difference in substance and meaning of exchange is influenced by topographical characters; personality, character, pattern, mechanism, commodity, and vari-

ety. The institutionalization of behaviour functions is intended to guarantee the sustainability of agriculture within the framework of sustainable development agriculture. *Haroan* contains knowledge and technical processes, imbued with solidarity and mutual assistance. The institutionalization of behaviour is effective in anticipating the scarcity of labour, according to the Simalungun ethnic view.

**Acknowledgments.** The authors are grateful to the Rector of Universitas Negeri Medan and also to all informants and resource persons for the assistance provided in conducting this research.

## References

1. Liddle, R.W.: *Ethnicity, party, and national integration: An Indonesian case study*. Yale University Press, New Haven (1971).
2. Damanik, E.L.: *Agama, perubahan sosial dan identitas etnik: Moralitas agama dan kultural di Simalungun*. Simetri Institute, Medan (2017).
3. Wolf, E. R.: *Peasants*. Prentice-Hall, Englewood Cliffs, NJ (1966).
4. Dalton, G.: *Economic anthropology and development*. Basic Books, New York (1971).
5. Dalton, G., Bernhard, R., Chivas, B., Franklin, S.H., Kaplan, D., and Wolf, E.: Pleasantries in anthropology and history and comments and replies. *Current Anthropology*, 13(3): 385-415. <https://doi.org/10.1086/201302> (1972).
6. Abar, A. Z.: Petani dalam perspektif Antropologi Ekonomi. *Agriekonomi*, 9(1): 36-50. <https://doi.org/10.22146/agroekonomi.16803> (2002).
7. Martinussen, J.: *Society, state, and market*. Zed Books, London (1997).
8. Schultz. T.W.: *Transforming traditional agriculture*. Yale University Press, New Haven (1964).
9. Lundahl, M. Efficient but poor-Schultz theory of traditional agriculture, *Scandinavian Economic History Review*, 35(2): 108-129, <https://doi.org/10.1080/03585522.1987.10408083> (1987).
10. Geertz, C.: *Agricultural involution: the processes of ecological change in Indonesia*. University of California Press, Berkeley, CA (1969).
11. Boeke, J.H.: *The evolution of the Netherlands Indies economy*. Netherlands Indies Council, Institute of Pacific Relations, New York (1964).
12. Scott, J.C.: *The moral economy of the peasant: Rebellion and subsistence in Southeast Asia*. Yale University Press, New Haven (1976).
13. Popkins, S.L.: *The rational peasant: the political economy of rural society in Vietnam*. University of California Press, Berkeley, CA (1976).
14. Scott, J.: Everyday forms of peasant resistance, *The Journal of Peasant Studies*, 13(2): 5-35. <https://doi.org/10.1080/03066158608438289> (1986).
15. Atteh, D.O.: *Resources and decisions; peasant farmer agricultural management and its relevance for rural development planning in Kwara State, Nigeria*. Ph.D. diss., The University of London (1980).
16. Clauss, W.: *Economic and social change among the Simalungun Batak of North Sumatra*. Verlag Breitenbach Publishers, Saarbrucken Fortlauderdale (1982).



17. Smith, R., and Kipp, R, eds.: *Beyond Samosir: recent Studies of the Batak Peoples of Sumatera*. Ohio University Center for International Studies, Southeast Asia Program, Ohio, USA (1993).
18. Penny, D.H., and Singarimbun, M.: A case study of rural poverty. *Bulletin of Indonesian Economic Studies*, 8(1): 745-772 (1972).
19. Penny, D.H.: *The transition from subsistence to commercial family farming in North Sumatra*. Cornell University Press, California, USA (1964).
20. Penny, D.H.: Komersialisasi pertanian subsisten: Satu kemajuan atau kemunduran. In Sajogo (Ed.). *Bunga rampai perekonomian Desa* (pp. 43-59). Obor Indonesia, Jakarta (1982).
21. Oudemans, R.: *Simalungun agriculture: Some ethnographic aspects of dualism in North Sumatra development*. University of Maryland Press, Maryland, USA (1973).
22. Mosher, A.T.: *Getting agriculture moving: Essentials for development and modernization*. Frederick Praeger, New York (1966).
23. Koentjaraningrat: *Manusia dan Kebudayaan di Indonesia*. Djambatan, Jakarta (1974).
24. Geertz, C.: Tihingan: Sebuah Desa di Bali' In Koentjaraningrat (Ed.). *Masyarakat Desa di Indonesia* (pp. 246-274). Lembaga Penerbit Fakultas Ekonomi Universitas Indonesia, Jakarta (1984).
25. Malinowski, B.: *Argonauts of the Western Pacific: An account of native enterprise and adventure in the archipelago of Melanesian New Guinea*. Routledge & Kegan Paul Ltd., London. (1922).
26. Blau, P.M.: *Exchange and power in social life*. John Willey & Sons, Chicago (1964).
27. Mauss, M.: *The gift: forms and functions of exchange in archaic societies*. (18th ed.). Cohen & West, London (1966).
28. Sahlins, M.D.: *Culture and practical reason*. University of Chicago Press, Chicago, USA (1976).
29. Spencer, H.: *The study of sociology*. D. Appleton and Company, New York (1896).
30. Comte, A.: *Auguste Comte and positivism: The essential writings*. G. Lanzer (Ed.). Transactions Publisher, New Brunswick, NJ (1998).
31. Durkheim, E.: *Rules of Sociological Method*. University of Chicago Press, Chicago (1938).
32. Radcliffe-Brown, A.: *The Andaman Islanders: A study in social anthropology*. The University Press in Cambridge, Cambridge (1922).
33. Marzali, A.: Struktural-Fungsionalisme. *Antropologi Indonesia: Indonesian Journal of Social and Cultural Anthropology*, 30(2): 127–137. <https://doi.org/10.7454/ai.v30i2.3558> (2006).
34. Radcliffe-Brown, A.: On social structure. *The Journal of the Royal Anthropological Institute of Great Britain and Ireland*, 70(1): 1-12 (1940).
35. Malinowski, B.: The group and the individual in functional analysis. *American Journal of Sociology*, 44(6): 938–964 (1939).
36. Purwanto, S.A., and Haryono: Dimensi adat dan dinamika komunitas Dayak di Kalimantan Timur. *Antropologi Indonesia: Indonesian Journal of Social and Cultural Anthropology*, 40(1): 67-87. <https://doi.org/10.7454/ai.v40i1.11950> (2019)
37. Prahara, H.: Torchlight in the City: Auto/Ethnographic Studies of Urban Kampung Community in Depok City, West Java. *Antropologi Indonesia: Indonesian Journal of*

- Social and Cultural Anthropology*, 36(2): 40-9. <https://doi.org/10.7454/ai.v36i2.9224> (2015)
38. Tylor, E.B.: *Primitive culture: Researches into the development of mythology, philosophy, religion, language, art, and custom*. J. Murray, London (1871).
  39. Malinowski, B.: *Crime and custom in savage society*. Harcourt, Brace, and Co, New York (1926).
  40. Creswell, J.W.: *Research design: Qualitative, quantitative, and mixed methods approach*. Sage Publications, Thousand Oaks, CA (2014).
  41. Johnson, R. B. : Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7): 14-26. <https://doi.org/10.3102/0013189X033007014> (2004)
  42. Greene, J. C.: Is mixed methods social inquiry a distinctive methodology? *Journal of Mixed Methods Research*, 2(2): 7-22. <https://doi.org/10.1177/1558689807309969> (2008)
  43. Creswell, J.W.: *Designing and conducting mixed methods research*. Sage Publications, Thousand Oaks, CA (2011)
  44. Ritzer, G.: *Contemporary sociological theory*. 2nd ed. McGraw-Hill, New York (1988).
  45. Berger, P., and Luckmann, T.: *The social construction of reality: A Treatise in the sociology of knowledge*. Penguins Books, London (1991).
  46. Denzin, N.K., and Lincoln, I.: *The Sage handbook of qualitative research*. 3rd ed. Sage Publications, Thousand Oaks, CA (2005).
  47. Goodenough, W.H.: Anthropological perspectives on multi-cultural education. *Anthropology & Education Quarterly*, 7(4): 4-7 (1976).
  48. Creswell, J.W.: *Qualitative inquiry and research design: Choosing among five approaches*. 2nd ed. Sage Publications, Thousand Oaks, CA (2007).
  49. Biro Pusat Statistik. *Simalungun dalam angka*. BPS Kabupaten Simalungun, Pematangraya (2019).
  50. Damanik, E.L.: *Potret Simalungun tempoe doeloe: Menafsir kebudayaan lewat foto*. Simetri Institute, Medan (2018).
  51. Damanik, E.L.: *Danau Toba: Permata mahkota Pulau Sumatra*. Simetri Institute, Medan (2016).
  52. Singarimbun, M.: *Kinship, descent, and alliance among the Karo Batak*. University of California Press, California, USA (1975).
  53. Damanik, E.L.: *Kisah dari Deli: Historisitas, pluralitas dan modernitas Kota Medan tahun 1870-1942*. Medan: Simetri Institute (2016).
  54. Damanik, E.L.: *Potret Simalungun tempoe doeloe: Menafsir kebudayaan lewat foto*. Medan: Simetri Institute (2018)
  55. Girsang, H.: Personal communication, January 30, Simalungun (2022).
  56. Sinaga, Dj.: Personal communication, December 15, Simalungun (2023).
  57. Saragih, M. Personal communication, January 25, Simalungun (2022).
  58. Damanik, E.L.: *Tolu Sahundulan & Lima Saodoran: Struktur dan fungsi kekerabatan triangular dan pentagonal Simalungun*. Simetri Institute, Medan (2023).
  59. Damanik, E.L.: Kinship imperishable: The structure of lima saodoran in Simalungun Ethnic marriage. *Walasuji: Jurnal Sejarah dan Budaya*, 11(1): 1-28. <https://doi.org/10.36869/wjsb.v11i1.67> (2020)

60. Damanik, E.L., Baiduri, R., Sinaga, R., and Naibaho, Z. Hanging on a Rope: The current triangular to pentagonal kinship transformation in Simalungunese, *Qeios* <https://doi.org/0.32388/K6NT0E> (2023).
  61. Sumardjo, J.: *Estetika paradoks*. STSI Press, Bandung (2010)
  62. Damanik, E.L.: Reaching-out and institutionalizing multiple kinship relationships in the social environment: *Ampang naopat* among Simalungunese, Indonesia. *Journal of Human Behavior in the Social Environment*, 32 (6): 819-840 (2021).
- Davis, K.: The myth of functional analysis is a special method in sociology and anthropology. *American Sociological Review*, 24(6):757-772 (1959).

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

